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# Evaluation of the UK Resource Centre for Women in Science, Engineering and Technology

## Final Report
## April 2008

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# Table of Contents

# 1. INTRODUCTION

In November 2007 DIUS asked the Tavistock Institute to carry out an evaluation of the UK Resource Centre for women in SET (UKRC), focusing specifically on the centre's work with women returners and employers. This commission followed on from previous work carried out in this field: the evaluation framework for Science in Society initiatives and the pilot of this framework.[1] Against this background, the main objective of this evaluation was to apply the evaluation framework to evaluating the work of the UKRC.

The report is structured as follows:

Chapter 2 provides the background to the work: scope, objectives and methodology used.

Chapter 3 provides a brief introduction to the women in SET policy context in order to set the scene for the following chapters.

Chapter 4 explores UKRC's mission, vision and values and how the organisation is situated in the women in SET landscape.

Chapter 5 discusses the internal operations of UKRC: management, governance and delivery mechanisms. It concludes by asking whether UKRC is a learning organisation.

Chapter 6 is a benchmarking section: it compares UKRC against three other women in SET organisations (two European and one American) to investigate similarities and differences in terms in a range of variables.

Chapter 7 offers an assessment of the activities undertaken by UKRC during 2004-2007 and seeks to come to an assessment of the outputs, outcomes and impacts associated with them.

Chapter 8 contains a more in-depth exploration of the key questions with the help of two case studies: research and pump priming and promotional activities.

Finally, chapter 9 offers our conclusions and recommendations.

A number of delays meant that the work needed to be turned around at a very short time. The evaluation team is aware of having taken up significant time in a period when UKRC was busy preparing for its new funding round. We are grateful to UKRC's Director, Annette Williams, and all staff for the help and access to information provided to us over the last months. We are grateful for UKRC's comments on earlier drafts of this report.

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[1] http://www.berr.gov.uk/files/file40324.pdf

# 2. SCOPE OF THE EVALUATION

## 2.1. Purpose and scope of the evaluation

The primary purpose of this evaluation is to assess the extent to which the UKRC is meeting its mission, purposes and objectives, and how effectively it is doing so. This covered two key elements:

- whether the Centre's mission, purposes and objectives – and the delivery models it adopts - are consistent with and support policy objectives aimed at attracting and retaining female scientists and engineers in STEM subjects and careers

- whether a centre is the most appropriate and effective vehicle for delivering policy objectives aimed at attracting and retaining female scientists and engineers in STEM subjects and careers.

In addition to this summative purpose, the evaluation had two main supplementary purposes:

- An *'Operational'* purpose. This aims to review and support the implementation of the initiative by focusing on its processes, for example management structures.
- A *'Learning'* purpose, i.e. contributing to the better understanding conceptually, methodologically and practically, of how to effectively deliver the Centre's mission and objectives, and similar STEM programmes in the future or in some other setting.

In order to answer these questions, the evaluation had the following scope:

- To investigate the DIUS funded elements of the Centre's work rather than activities carried out as part of the EQUAL JIVE project.
- To focus on remit given to UKRC by DIUS as expressed in the nine tasks, and in particular UKRC's work with women returners and employers.
- To look back at the period 2004 to 2007 rather than forward at the emerging strategy for 2008 onward.

## 2.2. Evaluation methodology

Our approach to the evaluation was based on a theory of change framework which was deemed appropriate for accommodating UKRC as an instrument of change and at the same time incorporating – and acting upon – models of change. In practical terms, this meant adopting multi-methodological and multi-staged approach. The evaluation design foresaw five consecutive phases:

- Scoping: understanding the UKRC environment, auditing data sources and refining methodology;

- Mapping: review 'Mission' and purposes in policy context, evaluate models , comparison with other models;

- Summative review: outputs assessment, outcomes and impacts for beneficiaries, partners and stakeholders;

- Process review: programme architecture, operational effectiveness

- Synthesis: integration and synthesis of results of other work packages, recommendations and change strategy.

The initial proposal also contained a developmental stage with a number of action learning sets, but in the course of revising the proposal these were taken out at the wish of the client.

The methodological mix proposed included interviews, focus groups, surveys and a range of desk-based activities. Table 2-1 below show the methods proposed for each stage of the evaluation:

**Table 2-1: Research methods by work package**

| Evaluation Phase | Methods |
|---|---|
| Scoping | <ul><li>Interviews with UKRC staff</li><li>Stakeholder interviews</li><li>Document review and analysis</li><li>Website review</li></ul> |
| Mapping | <ul><li>Interviews UKRC staff</li><li>Stakeholders</li><li>Content analysis relevant documents</li><li>Activities analysis with benchmark examples</li></ul> |
| Summative review | <ul><li>Desk research: Logfile analysis Circulation audit, utilisation statistics, audit and content analysis, citation analysis, uptake statistics and profiles, financial analysis, interviews with UKRC staff.</li><li>Stakeholder interviews</li><li>Participants' survey</li><li>Participants' interviews or focus groups</li><li>Website user survey</li><li>Thematic case studies</li></ul> |
| Process review | <ul><li>Interviews/Focus groups with UKRC staff and regional hubs</li><li>Stakeholder interviews</li></ul> |
| Synthesis | <ul><li>Data integration</li><li>Triangulation</li><li>Value chain analysis</li><li>Cost-effectiveness analysis</li><li>Reporting</li></ul> |

## 2.3. Reflections on implementation

A major factor in carrying out this evaluation was time: a number of delays meant that much of the fieldwork had to be carried out within a period of approximately 2.5 months. This meant adopting a pragmatic approach to the task which resulted in most of the evaluation phases being carried out in parallel rather than consecutively as originally proposed. This required careful planning, not only concerning the timing of some of data gathering activities (in particular the surveys) but also of design of research tools.

Perhaps the main impact of the short timescale was on the website survey. This stayed on two pages of UKRC's website for three weeks but received few responses (14 instead of the anticipated 100).[2] However, we had a very good response rate for interviews (see table below). The participants' survey, though remaining under the target of 200, received a good result with 160 completed responses.

Table 2-2: Interviewee numbers achieved

|  | Sub Group | Proposed Interviews | Actual interviews | Reasons for discrepancy |
|---|---|---|---|---|
| UKRC | Hub |  | 10 |  |
|  | Centre |  | 4 |  |
| Total UKRC |  | 5 | 14 |  |
| Stakeholders | Government | 5 | 5 |  |
|  | Sector Skills councils and Employers | 10 | 7 | Unable to contact four *Sectors Skills* representatives Unable to contact five employers (emails and telephone messages were not answered) |
|  | Regional Development Agencies |  | 2 |  |
|  | HEI and research | 3 | 5 |  |
|  | Organisations working with women in SET | 2 | 3 |  |
|  | Other SET orgnisations, including: | 10-15 |  | Unable to contact two *Other SET organisations*, one because of bereavement, the other did not reply to emails |
|  | *Industry bodies* |  | 1 | Unable to contact one *Industrial bodies* representative |
|  | *Professional Institutes and Organisations* |  | 7 |  |
|  | *National Industry Board* |  | 2 |  |
|  | *National Advisory Group* |  | 1 |  |

[2] The evaluation team recognises that this was also because of the help in data gathering provided by UKRC.

| | Sub Group | Proposed Interviews | Actual interviews | Reasons for discrepancy |
|---|---|---|---|---|
| | *UKRC Governing body* | | 2 | |
| Total stakeholders | | 35-40 | 35 | |
| Women Beneficiaries | | 20 | 21 | |

# 3. UKRC AND WOMEN IN SET: THE POLICY CONTEXT

## 3.1. Understanding the Science, Engineering and Technology (SET) agenda for women

The rationale for the UK resource centre (UKRC) came after two decades of policies to encourage more women into SET through awareness campaigns[3], the celebration of technological innovation[4] and an understanding of the obstacles in attracting female scientists and engineers[5]. Most notably the Rising Tide report (1994) documented the loss of females to science at every stage. It made recommendations for encouraging girls and women to study SET, for improving their education and training, and to help women continue or return after a career break. Employers and Government 'needed' to develop equal opportunities policies, and family friendly measures, career advice, and help for women returners.

During the 1990's this gender awareness was also seen as a means to addressing SET skills shortages and resultant anxieties in Government about the technological competitiveness of the UK[6]. National initiatives were developed to expand women's skills in maths and IT and evaluate the effectiveness of policies which addressed skills gaps. It led to an understanding of the need to tailor policies to specific groups.

What seems clear from this time is that there was little strategic consistency on the links between encouraging women into SET and the subsequent benefits to the UK skills base. Initiatives also appeared to work in isolation which meant that the barriers to employment, participation and retention of women persisted as there was little evidence of change. In 2002, the SET Fair report attempted to address these concerns with practical solutions.

## 3.2. A 'working science centre' to support women

Set Fair (2002) outlined how a strategic approach to tackle under- representation is necessary to reduce fragmentation amongst initiatives for women in SET, help employers deliver a cultural change and stimulate organisational policy implementation. It used the language of business i.e. 'competitiveness', 'markets', skills and the 'return on investment' to justify the inclusion of women in SET. Its vision or rationale is:

 "*The vision is of an environment in UK science, engineering and technology education and employment, research and policy-making in which women contribute to, participate*

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[3] Women into Science Engineering (WISE), Women into IT (WIT), Women in Computing (WIC)
[4] Office of Science and Technology (1993) Realising our potential: White paper for science & technology London HMSO
[5] HM Government (1994) The Rising Tide: Women science, engineering and technology London, HMSO
[6] DTI (2000) Excellence and opportunity, London HMSO

*in and share the benefit equally with their male counterparts. To ensure that the UK knowledge-driven economy benefits from the inclusion of the talents of the whole population and that women benefit from the opportunities afforded by it*". (Set Fair report 2002)

The concept of a 'Centre' was a novel approach given that, there are alternative models of delivery that could support government policy[7] and there are a range of other initiatives providing SET support in the UK. Set Fair (2002) stated that women needed support at an individual level and this should be actioned through a 'working science centre' which builds on previous programmes to develop partnerships between organisations and help engage the private sector in funding key projects. It would act as a database centre outside government that would bring organisations/programmes and initiatives together. The centre would maintain identities, offer sustainability and focus for industrial funding to deliver an integrated programme.

The role of the science centre would be to.
1. Offer information sharing and support to women in SET bodies and reduce duplication of activities, dissemination and marketing
2. Act as an information base for the media, head hunters, government, industry and professional societies
3. Ensure a businesslike approach to project development and management and ensure sustainability of project outputs thus supporting industry and professional societies.
4. Act as a focus for organisations and companies working to get more women in set careers.

**In year 1**: The centre is created and set up with a steering board comprising the women in SET, associations and societies and other key advisors. The centre remit is defined, a database/knowledgebase is established and functional and projects are aligned.

**In year 1-3:** The triple membership of sector specific women in SET organisations. Increase women's membership of professional bodies by x percent at all grades.  New proposals are underway and there is a marketing campaign focusing on all sectors.

**In year 5:** Targets will be on membership rates, no of referrals to professional bodies and the successful evaluation and extension of mentoring programmes.


## 3.3.   A UK resource centre

The Government response to Set Fair was to set up a resource centre for women in SET the main "objective of which is to support and advise employers on how to effect change, and which will also put into place some of the initiatives recommended in SET Fair" (A

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[7] In the USA, for example, a number of recent initiatives – such as the 'AISES' and 'GEM' programmes – have been exploring ways of increasing the numbers of women in SET occupations through public-private partnerships, and through community-based programmes that link gender dynamics to other structural variables – like ethnicity – that are creating obstacles to labour market participation.

strategy for women in SET, 2003) The focus of the Resource Centre, recognises that a co-ordinated and integrative approach is required to address complex, inter-related issues for Women in SET.

In common with many SET initiatives, the Resource Centre would work in a rapidly changing policy landscape. Employers and the imperative to stay embedded in the science and engineering community seem to be a major focus for the drive to change according to the Government and this is reflected in the resource centres perceived tasks,

- recognition for good SET employers;
- the sharing of good employment practice for women in SET;
- disseminating and sharing information;
- setting up and maintaining an expert women's database;
- maintaining and disseminating statistics;
- raising the profile of women in SET;
- pump-priming innovation through developing, with others, support for initiatives such as, mentoring, networking, speaker's bursaries and mobility issues;
- supporting returners; and
- co-ordinating the work of women in science organisations.

The language of the document suggests that improvement comes from the close work with employers and dissemination of best practice. It means the identification of the best SET employers and the development of indicators to suggest this. The dissemination of information should be about building relationships, face to face contact and web resources and may take the form of advice, research and events. To raise the profile of women in SET it is recommended that the resource centre should recognise achievement and evidence change.

A further challenging task for the resource centre was considered to be bringing women back into the SET workforce because of the fast pace of such industries. This may need careful work with employers to understand the value of career breaks and flexible working, mentoring and encouraging women to be part of networks. In addition to this the centre's other remit to influence change in the public and private sector and is expected to work with existing professional bodies such as the Sector Skills Councils, Unions, the CBI and SET societies. In addition the then Office for Science and technology agreed to work with the centre to develop coordinated support and change in gender representation in its own SET contracts and providing agencies.

## 3.4.   The launch of the UKRC for women in SET

The UKRC was launched by the then Department for Trade and Industry (DTI), now Department for Innovation, Universities and Skills (DIUS), in 2004, following a competitive tendering process.  It is now the "Government's lead organisation for the provision of advice, services and policy consultation regarding the under-representation of women in science, engineering and technology (SET)" (UKRC, 2008).

The remit given to the Centre by DTI / DIUS was to focus work on the 16 plus age group, and specifically on professionals with higher education degrees.   Craft, vocational and lower technical levels were explicitly removed from the Centre's remit.  These were, however, covered by the JIVE project, the EU-EQUAL funded project run since 2002 by the consortium charged with implementing UKRC.  The UKRC in combination with the JIVE project therefore offered the opportunity for an integrated approach to women in SET at all educational levels and career stages.

## 3.5.   The UKRC and the 10 year Science and innovation framework

The Government's ten year investment framework for science and innovation (2004) sets out the attributes to a successful science and innovation system in the UK. It takes a competitive model for change the attributes/indicators include:

- World class research at the strongest centres of excellence

- Sustainable and financially robust universities and public labs across the UK

- A continuing step change in the responsiveness of the research needs of the economy and public services

- Increased business investment in R&D and increased business engagement in drawing on the UK science base for ideas and talent.

- A more responsive supply of science, technology, engineering and mathematics skills to the economy, and greater flexibility within schools and universities to attract the skills they need.

- Confidence across UK society in scientific research and innovative applications.

The UKRC's remit has implications for the fifth attribute listed above. It states that the UK education system needs to be more attuned to the evolving needs of business and public services in shaping the quality and quantity of students produced by schools and universities. To do this effectively such education establishments will need to compete with other employers to secure the right "quality and quantity of teachers and researchers". The ten year strategy (2004) outlines that,

"*Specific groups that have shown particularly low participation rates in science have also been identified. For example, Baroness Greenfield's report on women in science, engineering and technology found a range of barriers that prevented women from*

*pursing higher education in these subjects and from entering, staying in and returning to, science careers. For example, the numbers of female science, engineering and technology (SET) graduates within SET occupations was just over 80,000 in 2002, compared with around 400,000 male graduates in SET occupations*".

The implication of this strategy and its tone suggests that the UKRC model for Women in SET should continue to support employers under the frame of skills competitiveness and the Government will ensure that mainstream (gendered) policies directed at women reach their relevant sectors. The strategy ends with asking, "*How could women and other low participatory groups be more encouraged to pursue higher education in science, technology, engineering and mathematics and to pursue careers in these areas?*" This may show the future of any discussion of the UKRC model.

# 4. UKRC IN THE WOMEN IN SET LANDSCAPE

UKRC was thus set up against the background of a particular policy context and with a particular remit and tasks. This section now progresses to explore how far these tasks and remit are reflected in UKRC's mission, vision and purpose. We will also explore the underlying theory of change of the Centre in order to assess whether this is appropriate. This will also involve exploring how UKRC is distinct from other organisations in the women in SET landscape.

## 4.1. UKRC's mission and purpose and their coherence with policy

UKRC's **mission** is described in SETting the Standard, the document which outlines UKRC's strategy. According to this document:

"It is the mission of the UK Resource Centre to establish a dynamic centre that provides accessible, high quality information and advisory services to industry, academia, professional institutes, education and research councils within the SET and built environment professions, whilst supporting women entering and progressing in SET careers."[8]

Comparing this mission with the remit envisaged for the organisation in the Set Fair report as described above it becomes clear that these are closely aligned. Key phrases and concepts mentioned in Set Fair can also be found in this mission: the idea of a science *centre*, the provision of support at an *individual level*, and the provision of information. By addressing a cross-section of sectors and organisations, this mission also responds to the 2003 Strategy's call for a co-ordinated and integrative approach as well as its definition of work with employers as the main objective of the centre. These themes are further picked up in the description of UKRC's purpose: "to deliver a coordinated strategy that will over time make a significant contribution to enabling the UK to maximise the potential of women scientists and engineers thus enhancing the business competitiveness of industry (including research) and academia, and embedding opportunity and choice for women."[9]

An interesting difference between SET Fair and the Strategy for Women in SET is the way in which the centre's task towards women in SET organisations is being talked about. In SET Fair, the role of the proposed centre was to offering information sharing and support to women in SET bodies and reducing duplication of activities, dissemination and marketing. In the 2003 strategy for women in SET the main objective of the centre had become to work with employers, and in relation to the issue of working

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[8] SETting the standard. A Guide to: The UKR Resource Centre for Women in Science, Engineering and Technology, p. 5

[9] SETting the Standard. A Guide to: The UK Resource Centre for Women in Science, Engineering and Technology, p. 7

with women in STEM organisations it stated that: "it will be imperative for the centre to be embedded in the science and engineering community, to engage top management, particularly men, as well as *drawing on the expertise of women's groups in SET organisations and women themselves* (emphasis added)."[10]  This phrasing can be found almost unchanged in sentence three of the description of UKRC's purpose:  "*For its knowledge base, the UKRC will draw on the range of successful national and international women in SET initiatives* whose strategies and interventions if taken up by employers, educationalists and policy makers could make significant in roads in changing the current landscape (emphasis added)."[11]

Overall, the mission and purpose of UKRC as expressed in its key documents can therefore be regarded as closely aligned to the women in SET policy in the context of which it had been set up.  The change of relationship to other women in SET organisations, and the place and language in which this is referred to, is noteworthy as it might explain UKRC's perceived difficulties of working with some of the women in SET organisations in the first three year of its existence (see below).

## 4.2.   UKRC's values and framework for action

UKRC's activities are based on two core values relating to culture and organisational change as well as the empowerment of women.  These core values are shown in the box below.

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*Culture and organisational change*:  UKRC believes that to increase the participation and position of women in SET there has to be a change in the organisation and culture of the SET learning and work environments.  This includes changes in the institutional systems, processes and structures as well as individual behaviours, motivations and mindsets which pose barriers to women's entry, impact on their retention and hamper progression to leadership and decision-making.

*Empowerment of women*: UKRC believes that women are capable of outstanding achievements and leadership at all levels but are often limited in their choice of career and the position they reach by external barriers that inhibit their true potential.  The force of the barriers are such that they can seriously affect women's access to learning and progression in work, which therefore limits their confidence levels, aspirations, choices and levels of income.  Positive action (lawful under section 47 of the Sex Discrimination Act and not to be confused with positive discrimination) is therefore an integral part of the approach as a tool for giving women improved access to careers in SET and thereby helping create a level playing field for women.

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[10] DTI (2003) A Strategy for Women in Science, Engineering and Technology, p. 9
[11] SETting the Standard. A Guide to: The UK Resource Centre for Women in Science, Engineering and Technology, p. 7

These two core values allude to a feminist perspective as a framework underpinning UKRC activities. The model underlying these values is one of gender equality (men and women are equally capable) whilst leaning towards a view of female difference which argues that there are cultural and other factors that mean women in SET are being discriminated against. Therefore, structural changes are required in order to allow women to participate fully in SET roles. UKRC's model is therefore a transformative one. As the comparative assessment in section 6 of this report argues, this is a fundamentally different approach than, for instance, that of the German Kompetenzzentrum which applies a 'human capital logic' to its interventions based on an equal treatment stance.

The interest in the role of structures as a source of gender inequality in SET is reflected in UKRC's holistic model for change which guides both the Centre's interpretation of the situation of women in SET and its activities. The model "recognises the complex barriers and the shared responsibility for overcoming occupational segregation."[12]

**Figure 1: UKRC's holistic model for change**



| | |
|---|---|
| Gender stereotyping and self stereotyping by girls and women | Education and training environments and pedagogy |
| Family, friends and the media reinforce stereotyping | Employment policies and practices |
| School/options/qualifications | Professional Institutes/membership bodies/networks |
| Careers education and advice | Government legislation and policy |

Reflecting the transformative aspirations with regard to SET structures, UKRC's holistic model for change targets key sectors and organisations in the SET landscape: schools, other education and training environments, the field of employment in the broadest sense, professional institutions through to the level of policy. It also includes women's and girls' social and cultural environment (friends, family and the media). This is a comprehensive model which addresses those factors of inequality mentioned in UKRC's values and has a direct link back to its mission as quoted in the previous section.

Those in UKRC's wider stakeholder community who are familiar with the holistic model for change[13] agree that the model is valuable [S14, S13, S2, S16, S10, S9]. One stakeholder brought this to the point, saying that it was "necessary to push on all fronts" [S13].

Nevertheless, the model raises two main questions. As a framework for intervention, the holistic model for change effectively represents UKRC's 'theory of change' or

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[12] SETting the standard. A Guide to: The UKR Resource Centre for Women in Science, Engineering and Technology, p. 7
[13] The model is not universally known amongst UKRC's stakeholders.

intervention logic.  That is, it expresses the Centre's analysis of the broader context upon which it builds its activities.  However, we have not found evidence that this model is being systematically subjected to challenging enquiry or expanded upon, for instance by feeding experiences of the practice into an improved understanding and modelling of the causal links between individual elements of this model in order to improve understanding of impact of activities.[14]  This, then, leads on to a second issue in relation to this model: the potential tensions built into the Centre's mission, values and model for change is the relative balance between working with the structural factors as the core cause for women's disadvantage (as seemingly prioritised by the holistic model for change) and working at the individual level by "supporting women entering and progressing in SET careers" as included in the mission.[15]  Currently, for instance, the organisation invests significant resource on working with individual returners despite emphasis in both model and values being placed on the importance of structures.  Without a systematic feedback loop analysing the impact of 'agency' on structures as an ongoing process of theory building and refinement, it will be difficult to reconcile this tension.

On a more pragmatic note, some stakeholders pointed towards practical problems with implementing this model.  One stakeholder felt that a holistic model carried the danger of UKRC spreading itself too thin, especially where resources are tight [S13].  Another speculated that UKRC "is probably not large enough or sufficiently resourced to actually really successfully operate the holistic model" and that progress will be slower because of it [S7], a view that is echoed elsewhere [S4].  Finally, one stakeholder argues that whilst UKRC has a holistic model for change, in fact it focuses and prioritises because it cannot do everything due to staff and resource constraints.


## 4.3.   UKRC's distinctiveness in the women in SET landscape

UKRC as an organisation working with women in SET operates in a crowded field.  As of February 2008, the organisation's own database of women in SET groups, organisations and websites in the women in SET field contained 104 entries under the headings "promoters for women in SET", "groups changing SET for women" and "support for women in SET".  Many of these appear to have a similar remit to UKRC, and the experience of some individual services users of UKRC's seems to suggest that in terms of activities there are some overlaps (two employers, for instance, who are working with UKRC in relation to awards mentioned Opportunity Now as providing a similar service).  Nevertheless, looking specifically at structure, mission and purpose it is clear that UKRC has a number of distinctive elements when compared with other women in SET organisations:

Its **structure** combines a centre in Bradford with four regional hubs or centres (in the South-East, Wales, Yorkshire and Humber and Scotland).  This set-up provides

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[14] This was also not undertaken by the JIVE evaluation completed in November 2007.
[15] SETting the standard.  A guide to: the UK Resource Centre for Women in Science, Engineering and Technology, p. 5

infrastructure to deliver STEM support for women which other organisations are not offering [S5]. As we will discuss in greater detail below, this federated structure allows UKRC to do work other organisations admit to not being able to do (for instance in the area of mentoring).

UKRC's **mission** has been described earlier in this report and is talked of in similar terms to its purpose[16]. For the period 2004-2007 this was "to set up a dynamic centre to become a focal point for women in SET activities in the UK" [S5]. This mission translates into UKRC's holistic model for change which, in the views of one stakeholder, "is not being done by anybody else in the STEM landscape" [S7]. Another stakeholder felt that "the awareness thy have of the complexity of women in STEM is a real strength" [S4].

One UKRC interviewee described the mission of the organisation in more concrete terms, as being a "physical and conceptual central place for the co-ordination and delivery of activities on the part of women in SET, [an organisation that] addresses culture change in organisations and provides practical support to women in their career paths" [S6]. The distinctiveness – and added value - of UKRC's purpose comes from its cross-disciplinary / cross-sectoral remit [S6, S2], its work on both the demand and supply side of the SET labour market [S5, S7, S8] and the breadth of resources that it offers through its website [S5, S9]. One stakeholder acknowledged UKRC's practical help as an added value [S10], another that it offers a one-stop-shop for women in SET [S4]. What is interesting about stakeholders' perceptions of UKRC's distinctiveness of purpose is that, whilst thoughts of UKRC staff are rather coherent in mentioning most of these points, interviewees from the wider stakeholder community tend to be able to merely articulate one or at the most two components or sub-components of this purpose as distinctive (and hence providing added value). This suggests a highly personalised experience of UKRC but also a difficulty with seeing the whole of the organisation.

## 4.4. UKRC's interactions with other women in SET organisations

As we have explained above, the fragmentation was recognised as an issue in the 2002 Set Fair report and, as a result, UKRC was given as one of its tasks, by government, co-ordinating the work of women in science organisations.[17]

The co-ordination role in UKRC is held both in the centre in Bradford and in the regional hubs.

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[16] The **purpose** of the organisation as outlined in the SETting the Standard document is:
"to deliver a coordinated strategy that will over time make a significant contribution to enabling the UK to maximise the potential of women scientists and engineers thus enhancing the business competitiveness of industry (including research) and academia, and embedding opportunity and choice for women."
[17] A strategy for women in SET, 2003

For UKRC in Bradford, co-ordinating women in SET organisations means a national focus and contact with other women in SET organisations through formalised and less formalised pathways. Women in SET organisations are, for instance, represented in UKRC's governing structures. The terms of reference for the National Advisory Group (NAG) – set up as a "forum for consulting with key organisations from the SET, equalities and trade union communities" – allow for the presence of one women in SET organisation. A second set of formalised relationships is with women in SET organisations that, during the period 2004-2007, were sub-contractors of UKRC. These organisations were: WiTEC, MentorSET, OmniPaws, WISE, Athena, Daphne Jackson Trust, Portia, OmniPAWS and Headstart.[18] Subcontractors were engaged to deliver particular sets of activities within the UKRC remit on behalf of UKRC. The organisation sees this as an integral part of its co-ordinating role, as well as a contribution to achieving its mission [S5]. AWISE and BCS Women have also received pump priming grants. UKRC staff further report activities such as signposting, providing information and engaging with organisations on a one-to-one basis. Figure 2 below illustrates UKRC relative to other women in SET organisations.

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[18] Please note that the composition of sub-contractors changed between 2004/05 and 2005/06.

**Figure 2: UKRC relationships with women in SET organisations**



Women in SET organisations

Anita Borg Institute
British Council: Women in Science
British Federation of Women Graduates
Central European Centre of Women and Youth in Science
Chwarae Teg
Computer Clubs for Girls
Digital Women's Network
European Platform of Women Scientists
Expert Database of the International Taskforce on Women in ICT
FEMtech Women in Research and Technology
Gender IT
High Tech Women
IOWME
Mums in Science
National Association of Women in Construction
National Institute of Women in Trades
Planet Jemma
RAS Committee for Women in Technology
Regional Networking for Women
SET Routes
South Yorks Women's Development Trust
Technology Partnerships for Women Innovators in Europe
The Balance Project
Pandora's Mighty Soldiers
Woman Pilot

Continued...
Women in IT
Women in North West Engineering
Women in Plumbing
Women in Property
Women Science
Women in Technology (AUS & USA)
Women's Technology and Education Centre
Business and Professional Women (UK and EU)
Diva-Biz
International Federation of Business and Professional Women
KILDEN
National Assoc of Women in Construction
Women in Games
Change the Face of Construction
Mother at Work
National Assoc of Women Pharmacists
Opportunity Now
SET Routes
There's more to life than shoes
Where women want to work
Women in European Universities
Women in Mining
Women in Physics
Women in Telcoms and Technology

Headstart
WECOE
Daphne Jackson Trust
Euro Wisdom
WITEC

British Computer Society Women
SET Women
SEMTA
WISETI

Girls Make Your Mark

Mentor SET

West Scot LAWN
Doing Gender
AWISE
Esselmont Group

Women's Engineering Society

UKRC

AWISE Cambridge

WISE

The Open University

Equalitec
Athena SWAN Charter

PORTIA
JIVE
Women in the Built Environment
Women in Technology
Let's Talk SET
Let's Twist
L'Oreal and UNESCO Women in Science Awards
WISE in Scotland
WISED

**Partnership with UKRC**
**UKRC Subcontractor**
**Represented on UKRC advisory group**
**Funded by UKRC**
**Pump primed organisation**
**Attended UKRC Conference 2008**

Whilst these activities provide a framework for a degree of co-ordination in the women in SET landscape, it is clear that the scale of it is limited. There is no consensus among the stakeholders we interviewed for this study on UKRC's added value in respect of reducing fragmentation of women in SET organisations. Several stakeholders volunteered the view that UKRC had added value in coordinating women in SET organisations. One interviewee, for instance, said that: "Most recently they have started to coordinate and link works between learned societies – this type of support for partnerships and networks is really helpful" [S3]. Another interviewee felt that: "Through working with all the different organisations they are pulling together best practice across these groups and areas of STEM, which again is a unique contribution to the STEM landscape" [S4]. A third interviewee felt that UKRC avoided duplication.

However, a similar number of stakeholders interviewed for this study were sceptical as regards the added value of UKRC in the women in STEM landscape. Several stakeholders felt that UKRC's co-ordination role was weak at present. There was a sense that work with other women in SET organisations could be more effective and might have happened faster. In the views of some stakeholders (3), there is duplication of effort so that work done elsewhere is also being carried out at UKRC level. Some stakeholders (2) also expressed a desire for greater leadership of UKRC, be this through the development of new ideas for collective projects or "taking a more proactive role in being the voice for all. That is, if we were all under the same umbrella surely we would then be stronger through a united and common voice, which should create change more speedily and effectively." [S2]

Among UKRC staff there is an awareness in UKRC that this is an area to work on, but also a feeling of having been in a difficult forcefield in the past three years: fulfilling its contractual obligations with government whilst building an organisation whilst at the same time working in a field populated by a plethora of organisations with a strong sense of autonomy and identity whilst attempting to co-ordinate the work of these organisations, some of which had also been competitors for the UKRC contract and some had expectations of automatic funding. Going forward, the combination of the learning from the past three years together with plans for the creation of a new full time post focusing on co-ordination is expected to strengthen the organisation's work in this area. There are plans to build a web platform for women in SET organisations which might include information on funding sources or relevant legal information.[19] There will be fewer sub-contractors and more support for organisations to develop.

One task of this work on coordination will also need to be a serious consideration of how especially two further activities of UKRC can be better used to bring together women in SET organisations.

For instance, the full potential of the **SET Directory** for co-ordinating women in SET organisations is unlikely to have been fully achieved. The SET Directory provides a list of organisations working on women in SET issues in the UK and its regions as well as

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[19] UKRC may also wish to consider making this an interactive space which allows organisations to exchange ideas, find project partners etc.

further afield.  Information is broken down by sector and (type of activity).  Short descriptions of the organisations' focus of activities as well as a URL are provided.  In a field with such a plethora of organisations this is potentially a useful tool not only to increase transparency but also to allow organisations to link up, within and across domain, geographic and other boundaries.  However, it is also the case that merely displaying information does not in itself guarantee that the co-ordinating potential of this feature is achieved.  Even though the SET Directory is a mere two clicks away from UKRC's home page, hits on the page between period November 2007 through to March 2008 have been comparatively modest.  Further, no external organisations link to the database[20] and searching for "SET directory" in the Google search engine guides the user to an Athena Swan URL[21] rather than the UKRC site – potentially confusing for the user.

UKRC's **annual conferences** provide an opportunity for the women in SET community to come together, network and build and maintain a community of practice.  However, it seems that at present UKRC conferences are not yet seen as 'must see' events for organisations active in the field of women in SET.  At the 2008 Annual Conference, nine organisations were registered that can be specifically classified as women in science organisations and not part of the UKRC system (e.g. as partners).[22]  Their delegates represented 6 per cent of those on the delegates list.

Whilst UKRC's centre in Bradford assumes an explicit role in co-ordinating women in SET organisations, this appears to be seen as less of a core task in the regional hubs.  Two of the hubs reported not taking much of a co-ordinating role in their regions.  In one case, co-ordination can be seen to happen (incidentally), almost as a by-product of the hub's embeddedness in its region.  Interestingly, the co-ordination strategy of the Yorkshire and Humber hub (now subsumed into UKRC) was not confined to pulling together just women in SET organisations.  Rather, it was the aspiration of the hub to pull together all organisations in the region interested in women in SET, not necessarily just women in SET organisations.  The reasons for taking this broader approach were to create sustainable links between relevant organisations that would continue in case the hub ceased to exist.  The hub did this through organising a number of events, and also had a place on the Regional STEM Board whose remit includes making decisions about regional STEM strategies and delivery.[23]

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[20] As evidenced by a 'link search' run in google in March 2008 (link: link:www.ukrc4setwomen.org/html/resources).
[21] http://www.athenaswan.org.uk/html/about-ukrc/?PHPSESSID=4007c3906ffee0e0d6f72f18c6128152
[22] Ie either promoting women in SET, changing SET for women or supporting women in SET
[23] Members of this also included: DfES, LSCs, SSCs, Aim Higher, Science Council Yorkshire and Humber, SRIP Partnership, Yorkshire Forward, SETNET and NCETM.

# 5.  HOW DOES UKRC OPERATE?

## 5.1.  Management and Governance

### 5.1.1.  Key structures and processes

UKRC operates on a federal '(or hub-and spoke') structure.  The organisation is 'directed' from a centre in Bradford which is responsible for the conceptual and strategic work of the organisation (such as the development of new products and the policy work) and also does much work with employers.  UKRC in Bradford also holds other functions for the organisation, such as information and communication services (e.g. the Goldmine database, UKRC's website, data analysis) and the development of monitoring processes.

In 2004-2007, the Centre in Bradford had rather straightforward internal organisational structure.  The Bradford Centre started with 11 people divided into five sectoral teams, each headed up by a manager: Employer Liaison; Women Returners and Mentoring Team; Information and Knowledge Team; PR, Marketing and Events team and a Business Development Team.[24]  Heading up the centre in Bradford and UKRC as a whole is the Director.

This structure was (and remains) largely replicated in the organisation's regional hubs (though, as the table below indicates, in the case of the South-East hub, it was the hub manger who for most of 2004-2007 held the work with women returners and employers rather than designated managers).  Each hub has a manager (or director) responsible for the hub's work (including strategic direction) and its team.  Each hub then has designated staff with women returners (and / or until recently mentoring work) and employers.[25]  Hubs also tended to employ administrators or other support staff.  This mirroring of roles certainly worked in allowing the organisation to have meetings along sectoral and role lines (see more detail on this below).  The hubs operate rather autonomously not only in the management of their staff and delivery of activities (though targets are set in negotiation with the centre in Bradford, see below) but also in the management of their finances.  The funds received from UKRC pay for staff time (rather than, say, activity), so it can be difficult for hubs to estimate the relative costs of their individual activities.

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[24] Annual Review 2004-2005, p. 2; SETting the Standard, p. 9.  These teams are being re-named for the period 2008 onwards.

[25] The Scottish Centre is the exception as it does not deliver employer work.

Table 5-1: Roles in UKRC Hubs

| South East Hub | Yorkshire and Humber | Wales Resource Centre | Scottish Resource Centre |
|---|---|---|---|
| **Hub Manager**<br><br>*Strategic work, attending national meetings, work with employers (kite mark, CEO charter, women returners)* | **Regional Hub Manager**<br><br>*Overseeing work of the hub, managing hub's team, keeping track of the hub's work and progress, participation in Senior Management Team of UKRC, work with Yorkshire Forward.* | **Director**<br><br>*Management of WRC, liaison with UKRC, policy* | **Manager**<br><br>*Staff management, liaison, finance, report to the Dean, contract manager at UKRC* |
| **Women Returner Officer / Services for Women**<br><br>*New role created in October 2007* | **Gender Equality Coordinator (mentoring and networks)**<br><br>*Women returners: individual support, peer mentoring circles, work placements, training* | **Women Returner Officer / Services for Women**<br><br>*Peer mentoring circles, recruitment of returners, support and advice to returners* | **Women returners**<br><br>*Recruitment, work placements, links and opportunities* |
| **Employment officer / Businesses and Organisations**<br><br>*Recruiting* | **Gender Equality Coordinator (employers)**<br><br>*Engage employers, CAT* | **Employment Liaison Officer / Businesses and Organisations**<br><br>*Establishing and maintaining contact with employers, culture analysis tool, awards* | |
| **Mentoring trainer***<br><br>*Mentoring training to women.* | **Gender Equality Coordinator (careers)*** | **Mentoring officer*** | |
| **Administrator**<br><br>*Organises events* | **Team Administrator*** | **Finance and administration officer*** | |
| | | | **Information Manager**<br><br>*Website, publications, collection of data, dealing with enquiries, communications, financial* |

| South East Hub | Yorkshire and Humber | Wales Resource Centre | Scottish Resource Centre |
|---|---|---|---|
| | | | administration. |
| | | Media and PR officer* | PR and Media specialist<br><br>*Research into construction skills* |
| | | | Student workers |

*Source: Interviews with UKRC hubs (February and March 2008), UKRC website (roles marked with a \* have ceased or are about to finish)*

The overall picture that emerges, therefore, is of an organisation that was initially staffed in a relatively lean way when it started. Though centre staff currently in post or about to be recruited are now around 38, the impression is that this certainly remains true for the hubs especially when considering the breadth of activities it covers and the style of delivery chosen (see below).[26] Nevertheless, some stakeholders interviewed as part of this study reported having felt confused (at some point or another) about who to speak to. Two stakeholders alluded to staff turnover being an issue[27] and one stakeholder felt that this "can be extremely irritating for partners as it means work keeps on being interrupted and you find that you don't know who it is you are supposed to be talking to" [S17]. That same stakeholder also felt they had experienced a "definite lack of clarity and communication between UKRC staff" and felt that this was "quite a problem if you are trying to work at the strategic level." It is important to stress that this is anecdotal evidence as most stakeholders were not able to comment on internal UKRC governance and management. Nevertheless, the management of role hand-over vis-à-vis the stakeholder community may gain relevance in the context of the recent recruitment of five new members of staff. Moreover, for the delivery of its work UKRC drew on a large number of subcontractors (ten in 2004/05 and 11 in 2005/06) and partners (three) to support the delivery of its services which added a significant layer of complexity to the organisation.[28]

In addition to its partners and sub-contractors, UKRC drew on in particular two advisory bodies in order to link up more widely with SET organisations: the National Advisory Group and the Implementation Group (now women in STEM expert group). The composition of these groups, as illustrated in Figure 3 below, reflects both UKRC's remit (16+ and women with higher education background) and its structural focus as expressed in the vision and mission of the organisation of working with structures rather than, perhaps, its connectedness to the grass roots level. Going forward, a new Industry

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[26] See Annex 3.

[27] Though they offered different hypotheses on why this might be an issue, one arguing location might be an issue, the other lack of permanent funding. Data collected does not allow triangulation of these comments.

[28] Partners and subcontractors have been rationalised for the period from 2008.

Board has been set up which brings a greater number of businesses into UKRC's advisory structures.[29]

Figure 3: Type of organisations in National Advisory Group and Implementation Group
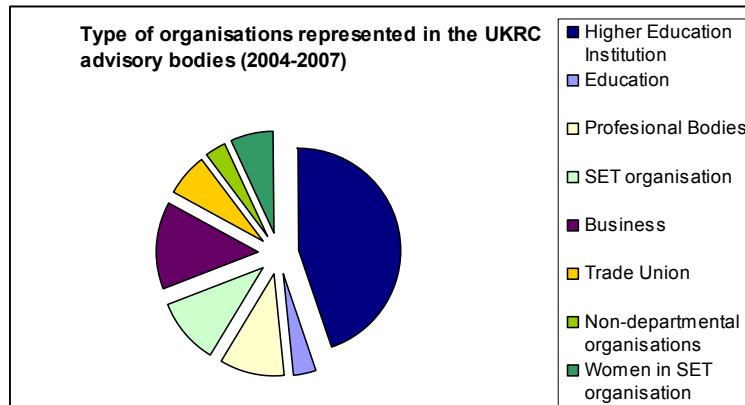


Until the new Governing Body was set up, external accountability lines were not well developed. Other than DTI / DIUS in a contract management role, there was no body that had a monitoring role. The National Advisory Group received quarterly progress reports, but as a consultative forum it did not have a monitoring role for the organisation. This gap was recognised last year and the new Governing Body set up. Its purpose is to "act as the governing body for UKRC, for financial management and overall business strategy, overseeing contacts delivered by the UKRC and ensuring risks are identified and managed effectively (…)".[30] The governing body has been described by one stakeholder [S22] as being in the "forming stage" of group development. The group has met once and as part of this meeting took stock of achievements and how to move forward. Monitoring is one of the areas the Governing body is currently looking at.

## 5.1.2. Linking hubs and centre

UKRC's centre in Bradford and its four 'hubs' are linked through a complex web of formal and informal relationships which balances a necessary degree of hub autonomy with systems and processes put in place to support the needs of the organisation as a whole. When staff were asked specifically about UKRC's way of working, answers frequently referred to partnership and collaboration. This is a philosophy that also appears to guide the way internal operations are organised. Indeed, one interviewee argued that, whilst the relationship between the centre in Bradford and the hubs is a contractual one, the quality of the relationship felt like a partnership.

The four hubs are in a contractual relationship with UKRC. These contracts are managed from the centre in Bradford through dedicated contact managers. An integral part of this contractual relationship is the setting of targets, by Bradford, for the

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[29] In addition there is a women in SET Steerting Committee for 2012 games and the Charters' group.
[30] UKRC governing body, Terms of Reference

organisation as a whole and for the individual hubs. The hubs' targets are negotiated rather than imposed. Indeed, the organisation has developed an awareness that the different regions have different needs and that, in fact, there are three different countries present which have different employment, education and other systems [S11]. This flexible (rather than a more mechanic) approach certainly appears to be appropriate allowing hubs to play to their strengths. Progress towards the negotiated targets are monitored through regular progress reports which were submitted to Bradford every two months and fed into UKRC's reporting to the National Advisory Group. This contractual relationship is something that the hubs are acutely aware of (all have mentioned this to us when we spoke to them) as is the need to meet targets.

In addition to these links created through the contractual relationship, the regional hubs and centre in Bradford are connected through a number of meetings and bodies in UKRC's governance structure that provide fora for inputting into organisational development and sharing organisational learning. The hubs, and individuals in key roles within them, are represented in the following governance bodies:

- The hubs are represented in UKRC's Core Partners Group, where they represent a little less than half its members. The group meets every three months and is charged with advising UKRC on strategic priorities. This group is an opportunity for hubs to actively shape and influence UKRC's direction of development.
- In at least one case, a hub director is also a member of UKRC's Senior Management Team. The team member recognises this as an 'anomaly' but also reports this as advantageous for keeping abreast of developments in UKRC.

Opportunities for information exchange and learning were provided by sectoral team meetings for the women returners and employers teams. Held every six to eight weeks, according to our interviewees these meetings served a range of purposes: discussing targets, sharing work and occasionally receiving training. The existence of a team manager appears to have been critical for making these team meetings happen. There is wide agreement that these meetings worked better for the women's team than the employer team who had been lacking a manager at UKRC.

In addition, there are less formalised, but no less important, communication routes between the hubs and the centre. Bradford sends out email bulletins, and team members in the hubs make use of email and telephone to stay in touch with UKRC's centre. Informal communication routes through the development of close working relationships between a hub member and a member in Bradford are also important.

The combination of these formal and less formal structures appears to contribute to delivering a sense of organisational belonging among UKRC's staff in the hubs [S20].

Finally, the organisation also shares a number of systems which in some ways make it comparable to an organisation with a head office and satellite dependencies. For instance, UKRC's Goldmine database, which contains the contact details of all women beneficiaries who the organisations has had contact with, is accessible remotely, allowing the hubs to use the system and feed directly into it. The remote access function

appears to have had some difficulties but because "we want everyone to be able to use it" [S5] the organisation is now considering using a different management system. Hubs can also draw on the centre in Bradford for particular services. One hub, for instance, draws on members of the Bradford team to do the first level quantitative analysis of any Cultural Analysis Tool (CAT) surveys she has run.

Interestingly, the relationships within the UKRC system are not one-directional, ie restricted to a centre-periphery communication. The hubs themselves have developed a way of working together by email, telephone and occasional meetings. These contacts allow the hubs to share information or exchange ideas. The two national centres in Wales and Scotland appear to be working particularly closely together due to their shared identify as national centres.

Overall therefore, our evidence base suggests that UKRC's internal arrangements for linking the hubs and the centre together are both appropriate and effective. They are appropriate because of their flexibility and the opportunities they provide for organisational learning. They are effective because they achieve a sense among hubs of being well informed and part of an organisation whilst not appearing to be overly demanding in terms of the time investment involved. Clearly, the employer team has not benefited from team meetings to a similar degree as the returner team. Considering the benefits derived from these meetings, the new Businesses and Organisations Manager should be encouraged to set these up for their new team.

### 5.1.3. Monitoring and quality assurance

UKRC uses the following monitoring procedures:

- Across the organisation, the key monitoring tool is the Goldmine database which includes key data for individuals who have been in contact with UKRC. Information on 325 criteria is stored. This includes a range of data such as contact and employment details, services used, contact history with UKRC and many others. So far, this data has been primarily used to inform the progress reports to the National Advisory Group (NAG) to demonstrate progress towards achieving the organisation's key performance indicators.

- Contacts with employers are monitored separately and classified by intensity of contact on a scale of 1 to 5. The intention of using this 'progressive scale' is that in the course of engagement with UKRC, employers would move up the scale towards a greater degree of intensity.

- Since the new website went live, UKRC is able to monitor hits and download figures in a much more precise way than before.

- UKRC also receives monthly updates on press coverage received.

As of yet, these monitoring processes do not yet fulfil their full potential as they are used primarily to demonstrate progress rather than to feed back into service or strategy development (and hence organisational learning). Indeed, it is recognised by UKRC and

in its wider governing structures that monitoring could be more effective [S5, S10, S7][31]. UKRC is currently working with its governing body on developing a more meaningful monitoring system. One idea floated for this is to use monitoring data to develop 'proof points' demonstrating how an organisation can benefit from engaging with UKRC. Part of this work on a more strategic monitoring of UKRC services might also include reflections on how the web statistics available for the newly redesigned website might contribute, and complement, the use of other data collected.

The organisation's quality assurance procedures for the services it offers include the following instruments:

- Feedback forms given to participants of activities and at events by both the Centre and the hubs;

- Regular surveys of women returners aimed to measure satisfaction levels with services provided and impact achieved;

- Gender equality trainers receive a 'rigorous induction' [S5] and are then used across the organisation to deliver the training. Currently it is being considered to extend this training to new staff, though no firm decision on this has yet been taken.

- Commissioning of evaluations of JIVE activities and the JIVE project, including the T160 course, the returner and mentoring services and the Cultural Analysis tool.

It would appear that the feedback processes in particular could benefit from further work. Whilst most stakeholders had difficulties commenting on UKRC's quality assurance, one stakeholder argued that follow-up is weak [S21]. Whilst this was a general point which was not expanded during the interview, the investigation of a very small sample of the feedback tools used by UKRC suggests that a few changes might significantly increase the organisation's intelligence on their activities. The feedback form from the 2008 annual conference, for instance, is not only very long (a full two pages) but the way the questions are formulated may also bias answers towards the positive. A shorter questionnaire eliciting a more balanced viewpoint would be a more meaningful contribution towards the organisation's quality assurance. Furthermore, with the website becoming an every more important resource, regular web surveys would complement current QA procedures.

A wider issue raised by some stakeholders which relates to the issue of quality assurance is the impact of staff turnover at UKRC and in the hubs [S16, S17, S7]. There is a feeling that the loss of organisational memory due to staff turnover has not been managed as well as it might have been, which was 'infuriating' [S17] for one set of stakeholders and led another [S7] to reflect on the impact this may have on quality assurance. This evaluation has not been able to find further evidence to support or reject these views, but would encourage UKRC to reflect on this feedback and, if considered valid, take remedial action.

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[31] Few stakeholders outside were able to comment on this.

## 5.2. Delivering activities

Much of UKRC's delivery work in 2004-2007, in particular relating to women returners, was carried out by its four regional hubs:[32]

- The Yorkshire and Humber hub, based at UKRC central offices in Bradford

- The South-East Hub, located with project status within Oxford Women's Training which in itself is located within the Skills for Life Division at Oxford Cherwell Valley College

- The Welsh Resource Centre located within The Women's Workshop, Cardiff Training Centre

- The Scottish Resource Centre, based within the Faculty of Engineering at Napier University in Edinburgh.

In addition to their 'core region', each hub covers some of the areas in its geographic neighbourhood and each region also has a named link in Bradford so that (in principle) the whole of the country is covered. Thus:

- The Yorkshire and Humber hub also covers the North East and the East Midlands.

- The South-East hub covers the South-East to Cambridge and Wiltshire, London and some parts of the Midlands.

- The Centre in Scotland has responsibility for the whole of Scotland bu also covers the border region.

- The centre in Cardiff covers Wales and the West Midlands and also does some work in the South West.

## 5.2.1. Regional delivery through hubs

UKRC's federated 'hub-and-spoke' model is a direct legacy of the JIVE project, the ESF EQUAL project run between 2002 and 2007 by the same group of organisations that won the UKRC contract, which aimed to address occupational segregation in the Science, Engineering, Construction and Technology (SECT) sectors. JIVE had been created by a group of people who in the 1980s had been involved in the women's training centres (then funded through EU ESF funds). This means that the Welsh and South East hubs as well as the hub and Centre in Yorkshire and Humber are able to draw on a rich tradition of working on questions of women in non-traditional areas in a particular geographic area.[33]

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[32] The Yorkshire and Humber hub has been integrated into UKRC in Bradford.
[33] The Scottish Hub was set up as a new centre in January 2006.

For the work of these hubs within UKRC this history and structure has some clear benefits. The regional 'hubs' are based in organisations that have accumulated much expertise and strong (strategic) links in their areas. This is perhaps particularly evident in the case of the Welsh 'hub', or the Welsh Resource Centre which appears to be extraordinarily well connected, both politically and to key SET and women's organisations in the country.

The **Welsh Resource Centre** is located in the building of the Women's Workshop, Cardiff Training Centre - - an organisation that has been training women in non-traditional areas ever since the 1980s. This long history has resulted in strong strategic links with and within key organisations in the country. For instance, the organisation has two Councillors of the Welsh Assembly Government on its board, and also has good links with the current First Minister. The deep embedding into the Welsh political landscape (perhaps symbolised by the Centre's geographic proximity to the Welsh Assembly Government building the roof of which is visible from the windows of the organisation) means that the Centre has successfully fed its positions into Assembly Government policies and regularly receives high-profile political visitors from the UK and abroad. In addition, key staff are linked to women in SET organisations through governing roles in organisations such as WiSE and the Women's Engineering Society in Wales allowing them to connect and influence. Anecdotal evidence also suggests that as Women's Workshop. Cardiff Training Centre the hub also has strong brand recognition in the population. The (Somali) taxi driver who drove the team member to the organisation whilst unfamiliar with the road name new immediately of the organisation and its location.

In a slightly different way, the Yorkshire and Humber hub has succeeded in positioning itself strategically in the region. The hub has very close links to the Regional Development Agency Yorkshire Forward, for instance. Since this relationship started in 2002 it has matured from a funding relationship to one where the hub is regarded by Yorkshire Forward as the key organisation in the region relating to women and STEM. This finds its concrete expression in, for instance, the following two developments: a representative of the hub is a member of the regional STEM board which makes decisions about the regional STEM strategy and delivery; Yorkshire Forward also refers organisations who deliver projects on their behalf to the hub if there is a gap on gender issues. This process, on the one hand, contributes to reducing the potential risk of duplication of work in the region, but also puts the hub in a position where it can work towards achieving several of UKRC's tasks (e.g. sharing good employment practice for women in SET, raising the profile of women in SET, co-ordinating the work of women in science organisations).

Indeed, the possibility to tailor activities to specific local and regional needs is something that a number of stakeholders mention favourably [S14, S13, S15, S7]. One employer, for instance, argued: "In terms of having regional hubs: it's best to be based regionally. Different regions have different demands, businesses in different regions will be very different" [S19]. Another stakeholder felt that: "The approach they've taken is probably the best way they can operate, they do need outlying operators as one size does not fit

all across the country and so having people who understand the locality and who can play into local networks is crucial." This was echoed by another stakeholder who felt that the hub-and-spoke model allowed UKRC to operate in far-flung places (unlike their own organisation) [S16].  Arguing a similar point, another stakeholder felt that "for women returners a local hub would, I imagine, be far more useful than a distant single central site" [S4].

However, there is a downside to this federated model.  Where either of these conditions were (for whatever reasons) not in place, the hubs have appeared to have found it more difficult to demonstrate to stakeholders their relative merits.

For instance, where a hub had to be set up from scratch this proved quite arduous: explorations to set up a hub in Scotland started in 2005 and formal agreement between three partners was achieved in January 2006 but it took until August that same year for the hub to be fully staffed – only for the staffing structures to change less than a year later as the delivery partnership discontinued its working relationship.  This lengthy process was something on of our stakeholders picked up on [S12] who felt that a lot of time was spent on the set-up and contracting negotiations and less on deliverables so it was difficult to tell what the hub did.

Moreover, whilst the work of the regional hubs (formally) covers areas beyond their administrative boundaries, and each region has a named contact link within UKRC, there do appear to be 'white spots' in coverage (and this is recognised within UKRC).  For instance, whilst the Cardiff centre covers part of the Midlands, employer work focuses on Wales (though the work with returners has a broad geographic focus).  There is also currently little work in the East Midlands.  It is important to recognise the organisation's structural limitations in achieving country-wide coverage of its work.  The regional hubs in particular are very thinly staffed so decisions need to be taken on where to focus.  Perhaps inevitably this means priority may be placed on servicing the own region well.  One interviewee picked up on this issue (and, in doing so, also validates the UKRC model) [S13]:

"(…) falls outside of the Hub area, so it's not great for us, Yorkshire is much better supported than we are. It's difficult – on the one hand it's good to have specialists supporting particular areas and working to develop local knowledge, networks and change, but lack of 'national' coverage means work is specific to localities or regions, with many areas falling between the gaps, but obviously they do not have the resources for complete or improved coverage or else presumably they would do this."

Another theme relating to the federal delivery model that stakeholders are picking up on revolves around communication.  Two stakeholders [S17, S16] raised difficulties with identifying the right person to speak to as an issue.  One [S16] felt that "although the idea of 'local specialists' is useful, it can be extremely difficult for those dealing with UKRC, because we are confused about who to speak with."

Whilst the decentralised operational model is thus beneficial to help UKRC achieve its objective, the question becomes what it means for organisational coherence.  What the

hub model and the associated hosting structure does not seem to create is a significant sense of disconnection from UKRC.  Managing the multiple identities (host organisation / JIVE / UKRC) is not always easy for the hubs, in particular as there is a feeling that JIVE had established a good recognition.

## 5.2.2.  The website: key delivery tool and representation of the organisation

The website of an organisation is not simply an electronic output or product. The UKRC for Women in SET website is both a centrally important representation of the identity of the UKRC as an *actual* organisation and a key vehicle for the delivery, promotion, dissemination and sharing of information and services to specific target audiences (e.g. Women, Employers, other Women is SET organisations).

**User experience**

Statistics clearly indicate that the UKRC website is consistently utilised, receiving significantly high levels of monthly traffic (average 4647 unique visitors[34]) between November 2007 and February 2008.[35]  The figure below shows a slight incremental increase from November '07 to January '08 with a noticeable step up in January 08 and a drop back down to early levels in February 08.

**Figure 4: Unique visitors to UKRC website**



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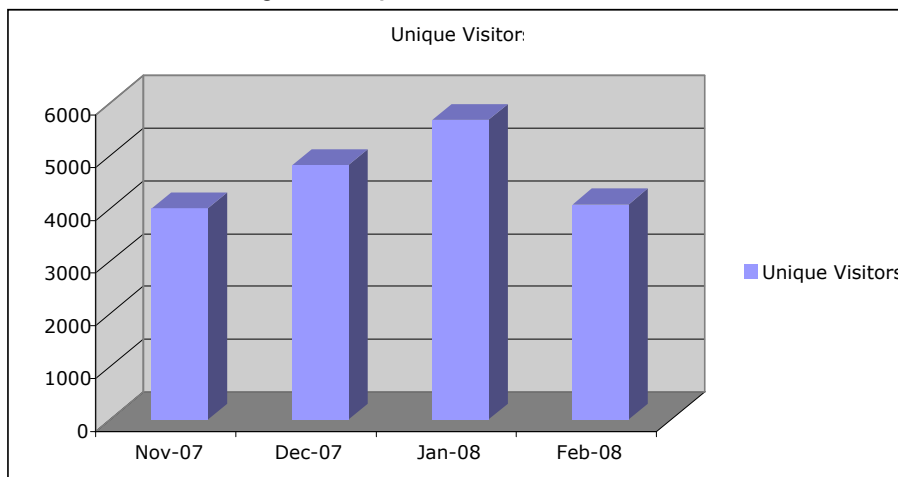
[34] This is a standard (but not sole) method for indicating the utilisation levels. The unique visitor is any number of visits from the same remote computer. This offers an insight into how many users are visiting rather than repeat visits from the same internet IP address.

[35] More historical data is not available as the previous version of UKRC's website did not allow for the collection of this detailed data.

With visitors to the UKRC website, the following services were particularly popular:[36]

- The GETSET Women database proved to be a very popular service, scoring very high across both registration, search, add and edit your profile pages; especially in the month of January 2008. It has seen a consistent incremental increase in the number of women registered between February 2007 to January 2008. However, the percentages for each quarter also indicate the number registered is a significantly lower than the percentage live members for each quarterly period (varying between approximately 40% and 50%) The combined figures suggest that the database has considerable potential to expand if all registered members can be made 'live'. We understand that although the UKRC make stringent efforts to facilitate, if the information given by women is incomplete or unsatisfactory member cannot be made live.

- The 'Athena Swan Charter for Women in Science' gained a consistently high scoring page view across all months, as does the main page 'about UKRC' and page 'Women and Girls'.

- There was an increase in page views of Research and Statistics across December to January (where the search functionality contributed to the high score in the top ten page views.

- Page views of the Resources section were in the mid range of the top ten in December and February 2008 but did not appear in the top ten in January 2008.

- There was also an increase in enquiries between December and January '08 and the page views promoting the March 2008 UKRC conference were markedly high in February.

- The table also indicates those pages which were initially within the top ten pages viewed but which have moved out of the parameter in subsequent months (i.e. Education and Raise Your Profile).

Initial findings from the survey also suggest that the UKRC website attracts a diverse range of users[37] with a range of backgrounds and purposes (e.g. a woman currently with a STEM background looking to return to work, a woman considering a possible career in SET, as well as a woman returner, a careers advisor and research fellow). No employers participated in the survey. A majority of users accessed the site to find a specific item of information or resource (60 per cent). The remaining 40% reported that they were just browsing the site. Cross-tabulation also revealed that the majority of users who had visited the site before, were attempting to find a specific item, information or

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[36] Importantly, this data only refers to specified URLs only. However, whilst data derived from single page views provides an initial point of departure, in order to undertake a thorough robust analysis of specific levels of utilization across the website, further periodic and historical data is required and where necessary, supported by data from other sources. For example periodic data on multiple page views could be triangulated, where appropriate, with the actual number of downloads of electronic documents (e.g Publications Catalogue) to give a more accurate picture of levels of utilization and trend shifts. At present, download information is not available for the publications catalogue. Although data from the circulation of the Progress Newsletter further demonstrates the high level of interest in UKRC and its services (3,989, February 2008).

[37] The response to the web survey rate was low: 14 users (14% of target). Therefore, reported results are based on a very small sample pool of potential respondents and any inferences are very tentative. Furthermore, this particular incarnation of the UKRC website has only been live since mid-November 2007. It is therefore not possible determine whether or not users' responses may be affected by their prior use or comparison to the pre-November 2007 website.

resource.  With the exception of one user (7%), all other users (93%) reported that they found what they were looking for on the website.[38]

Survey participants utilized a range of facilities on the site.  In order of popularity these were:

1. News and Events Information (43%);

2. Resources (e.g. SET Directory; Publications catalogue) (20%)

3. Other (20%)

4. Research and Statistics Information (14%)

5. Projects and Campaigns (7)

6. Services for employers (0%)

The majority of users (86%) rated the site as good to very good in terms meeting their requirements, and the majority of users (72%) reported that they would be very likely or definitely use the site again.

The participants' survey echoes this.  As the figure below illustrates, when participants were asked how satisfied they were with the service (see Figure 5) the results show that 42% were satisfied and 18% were very satisfied.  Only 9 percent were unsatisfied or very unsatisfied.

**Figure 5: How satisfied are participants with obtaining information from the UKRC website?**
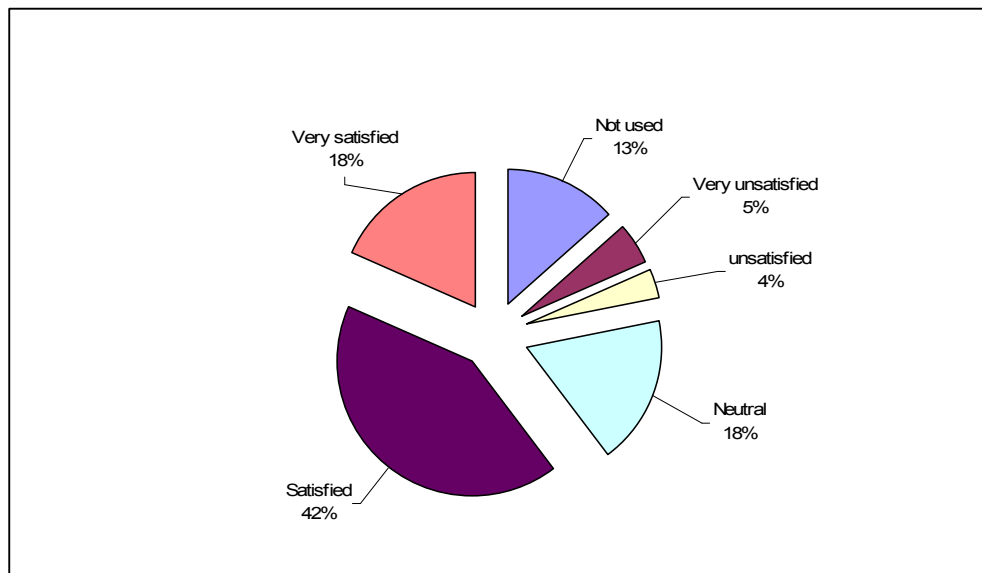


*Source: UKRC Participants survey 2008*

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[38] However, given the finding that the majority of users had already made use of the website on at least one occasion this figure may indicate familiarity of use with the website rather than first time ease-of-use and usability *per se*.

When asked how the website could be improved, web survey respondents answered this question with a range of comments, which focused on:

- Modifications to the aesthetics and layout of the website

- Provision of additional information and new resources (e.g. local / regional information about job opportunities for women in STEM; Scholarship and Fellowship information and a young persons section which has careers information)

- Extending existing resources (e.g. updates about the successes of women)

- Additionally, several positive, general user feedback reports were provided to the team by the UKRC

Table 5-2 below shows the range of suggestions made through the website survey on how UKRC's website could be improved:

**Table 5-2: Suggestions for improvement to the UKRC website**

| In what ways do you think the UKRC website could be improved? |
|---|
| Maybe have a local information involving job opportunities for women |
| I was hopeful that it might have information about funding female scientists! |
| Funding opportunities could be better advertised |
| More images in each section |
| More info about employees could be useful |
| More networking opportunities |
| Own survey on Home page (ca 1-2 topical questions) |
| Perhaps have an obvious link to a page of scholarships/fellowships specifically for women at varying stages of career, from a variety of organisations. |
| Regular updates about successes for women |
| The top third of each page seems to be dedicated to a large photo of little relevance to the content. I'd rather read the important text (and see the important images) in the main articles than that. |
| It's a bit boring |
| Include a young persons area that has careers information |

*Source: Evaluation of UKRC, web survey*

A few respondents to the participants' survey amended these comments with the following remarks:

"The website is good and has good content but would be good if it could link directly to jobs/vacancies on other websites"

"The website has always been very hard to navigate and I still think it tries to serve too many different audiences".

"The website is sometimes difficult to access the information you need quickly due to the menu choices".

**The website as a representation of the organisation**

Considering the importance of the UKRC website not only as a promotional tool but also increasingly the main location of resources, the evaluation team supplemented the website survey with its own brief heuristic evaluation and hands-on audit. We are also aware that the UKRC website was redesigned late in 2007, and that that this has involved considerable efforts by the internal UKRC team. Therefore, the aim of this activity is to offer positive, objective suggestions and reflections which could help further optimise the website and the experience of use; in terms of its 'fitness for purpose' as well as reporting any apparent usability and functionality issues.

The UKRC website provides largely text based information and a range of services and functionalities accessible through the structure of the user interface, which include the GetSET Database, Site Search, Publications Catalogue, News and Events, Research and Statistics. The site also contains a single multimedia asset; - a video introduction to the UKRC from the Director, Annette Williams.

The broad structure of the website consists of two site static horizontal menus above and below a small number of changing photographic banner images with the main UKRC branding logo above. The first top horizontal menu offers links to a mixture of interactive forms, information and site map options.

The colour and content of the main perpendicular hierarchical menu is dependent on page and text context. The appearance of this side menu is dependent on the selection of headline category-items in the mid-horizontal menu immediately located above (e.g. Scotland; Wales; Projects and Campaigns). In general, text content is presented consistently in the mid to lower right quadrant of the web page.

The website is informative and neutral in its visual design and communication. In some instances, hierarchies are flat: the SET directory and publications catalogue, for instance, are each two clicks away from the home page and hence easily accessible. Furthermore, the site is W3C certified and thus complies with web content accessibility guidelines. As the web survey indicates above, user experience is clearly good. This is also corroborated by feedback from users to UKRC directly. Nevertheless, in terms of its functionality as both a delivery tool and a representation of UKRC as an organisation, however, the website could be more effective.

The site clearly has potential to better represent the personality of UKRC by creating a sense of the intimate reality of the actual organisation and its 'human face.' Currently, it is difficult to get an easy sense of exactly who UKRC is, as an organisation of a whole range of people and specialist teams. And <contact us> produces only a rather impersonal enquiry form as opposed to the possibility of ascertaining more intimate knowledge of who are the appropriate personnel and who there is to contact. Creating a more intimate reality may be an important attribute for an organisation whose primary objectives are to encourage and facilitate women in SET careers. This might be achieved by presenting the user as soon as possible on arrival on the home page with succinct information concerning what UKRC does, who its audience is and the mission

and values of the organisation (helping to define the identity of this organisation). Information about personnel could be offered which include basic title, role and contact information, and even a photograph.  For the future, this might also involve considering a higher degree of interactivity and personalisation of the site.  Some suggestions on what this might involve are included in Annex 1 to this report.

The Home page (http://www.ukrc4setwomen.org.uk/) of the website is an anchor page both for the entire site, the outcome location for a user search engine query and a key transition point for the website. This page sets a precedent for the user - presenting an initial impression of organisation, what it is about and what is on offer and why they should continue to interact.  At present this page is very busy with information, transition and navigation options:  including the horizontal menu items and selection links, there are over thirty initial points of transition and navigation departure on the home page. The taxonomies are not universally intuitive for the 'naïve user' with little prior knowledge of UKRC whilst menu options are high (there are, for instance, over 30 menu options on the home page alone) and some information appears to be significantly duplicated (i.e. Engineering Select Committee Enquiry appears to be duplicated, leading to the same user outcome at bottom right *further information* and middle right of the page).  Whilst respecting the return user's needs for news and features, to situate the first time user and encourage longer term use, we suggest that the Home page should clearly articulate the core values of the organisation, what it does and perhaps even what its immediate benefits could be to the target user-audiences. Currently, this is not immediately apparent; - the four lines of text at the bottom left of the page only hint at what sort of organisation is behind this website and the more expansive video introduction to the website and its objectives is concealed amongst other announcements. In fact the home page has the overall character of a news and announcements page and its is only after interacting further with the menu system and mouse clicking to the <About UKRC> item is the user potentially presented with this type of information.

Ensuring that all key information on the site can be equally easily recovered would further enhance the effectiveness of the site as a delivery tool.  Whilst the SET directory, for instance, is a mere two clicks away from the Home page, we were consistently unable to locate the GetSET Database Women from the main menu, instead relying on the generic site search to identify its location.  Given the importance of this facility for a whole range of audiences (e.g. the media), we would suggest that the database, as well as other information deemed strategically important, is given clear prominence and logically integrated into the site-wide menu system.

Finally, as a result of generic searches the evaluation team consistently noted that there appears to be a range of domain names associated with, and carrying the branding for the UK Resource Centre for Women (including http://www.ukrc4setwomen.org.uk/ ; http://www.getsetwomen.org/ http://www2.shu.ac.uk/nrc/ ; http://www.setwomenstats.org.uk; http://www.athenaswan.org.uk/html/about-ukrc/).  A number of domain names appear to refer to both current and previous versions of the UKRC website and particular resources i.e. the publications catalogue offered by UKRC.

This is an important issue for both usability and utliisation of the website. For the end user this can lead to uncertainty about the authenticity and identity of the website: which is the real UKRC website? Am I accessing on old version of the website? Which is the current version of the site? This may be especially acute for returning users arriving at the site having entered a search term again. For example in the case of the 'athenaswan' domain name this appears for all purposes be the current UKRC website. However, the user may be left to decide if there is a real difference between this site at this domain and the site at http://www.ukrc4setwomen.org.uk/. We would recommend that a clear, single domain name is permanently associated with the UKRC and its services (i.e. the publications catalogue). This will ensure that there there is no confusion concerning the identity of the site or brand and that searching for the UKRC returns only a single main domain name.

## 5.3.   Implications: UKRC a learning organisation?

One of the evaluation questions addressed was the extent to which UKRC can be seen as a 'learning organisation'. There are various definitions of what this means. According to Pedler et al (1992) a learning organisation facilitates the learning of all its members and continuously transforms itself. It is furthermore of utmost importance for an organisation to spread among its human resources a *learning spirit*, in order to concretely deal with tacit and explicit knowledge and make the most effective use of it (Nonaka & Takeuchi, 1995; Brown, 1998).  Organisations need to 'learn how to learn'. Drawing together the key ideas in the organisational learning literature, including Dixon's (2005) ''organisational learning cycle' model, the evaluation explored the extent to which UKRC has developed approaches, models and practical tools to promote review, reflection and learning. The criteria used to make this assessment and our assessment of UKRC's current position in terms of each of the criteria is shown in Table 5-3.  The data used for the assessment were drawn from: interviews with staff and beneficiaries; content analysis of available documentation; citation analysis of bibliographic databases.

Table 5-3: Organisational learning assessment

| Organisational learning Criteria | Assessment |
|---|---|
| Mechanisms for the acquisition and creation of new knowledge for the organisation. | A range of mechanisms is in place (collecting monitoring data, surveys with service users, evaluations), but some methodologies need tweaking to deliver optimal results. |
| Mechanisms for dissemination of knowledge to others within the organisation | Team meetings, email bulletins and informal conversations valued by staff as opportunities for sharing knowledge and learning. |

| Organisational learning Criteria | Assessment |
| --- | --- |
| Mechanisms for applying new knowledge in improved or renewed practices | Recommendations from 2007 JIVE evaluation fed into review of strategy for 2008-2011. However, monitoring data not used to inform service development to date. |
| Mechanisms for supporting the sharing of the mission, vision, and values | No complete consistency across organisation. Understanding of some elements (relating to work with women returners and joint working with organisations). Other elements less consistently mentioned (i.p. addressing structural factors on inequality and collaboration with other organisations). |
| Provision of on-the-job as well as off-the-job facilities for individual learning. | Open plan office in Bradford likely to facilitate informal learning. Training for new staff and shadowing considered. |
| Mechanisms to enable members to develop meta-cognitive skills (i.e. 'learning to learn'). | Insufficient evaluation data to allow assessment. |
| Collection of external data, from networks and stakeholders, and the internal development of new ideas relating to both product and process | Advisory bodies provide link to key stakeholder communities with meetings |
| Integration of this information into the organisation | Staff and stakeholders not universally aware of outcomes of advice provided. |
| Collective interpretation of shared information, internally and with networks | Insufficient evaluation data to allow assessment. |
| Development and implementation of an organisational strategy based on the interpretation | Insufficient evaluation data to allow assessment. |
| Monitoring and review of the strategy | Completion of the JIVE project and its evaluation used as driver to review strategy but no ongoing review had been taking place before based on the data collected. |

# 6. WHAT WOULD AN ALTERNATIVE DELIVERY MODEL LOOK LIKE?

## 6.1. Scope and purpose of the analysis

The comparative analysis element of the evaluation formed part of its initial 'mapping' phase. This focused on mapping the role and position of the Centre in the current policy landscape. It looked at the mission, purposes and strategy of UKRC, and how the strategies and models adopted compare with similar types of initiatives. The emphasis in this part of the evaluation was on innovation and change. At one level, the UKRC initiative is itself an instrument of change, seeking to redress the over-representation of male scientists and engineers in the labour market. At another level, the Centre incorporates – explicitly and implicitly – models of change – seeking to transform the attitudes of employers; encouraging changes in the career behaviour of women; adopting particular 'learning models' that consider learning as itself a 'transformative' process, for example in the linkages between lifelong learning and career development. Following 'theory of change' and 'change driven' evaluation approaches (Chen,1990; Patton,1997[39], Rossi, 1999) [40] this part of the evaluation aimed to explore the core 'logic' or paradigm of change, and the methods adopted to promote change.

## 6.2. Methodology

The methodological approach used can be summed up in one word – pragmatic. Our initial intention was to develop a comparative analysis grid that combined functional and 'discursive' analytical constructs. The 'functional' approach involved comparing UKRC with its comparitors on the basis of functional attributes – including governance structure; funding basis; delivery mechanism; activity range; target groups. The discursive analysis was aimed at using content and discourse analysis to unpick and compare the 'cultural logic' underlying the 'grand vision' of the initiative and how this was embedded in its mission and values.  This was based on cultural logic analysis (Strydom, 1997; Cullen, 2004) and makes an assessment based on four constructs:

- What it sets out to do in terms of the aims and objectives ascribed to it by key stakeholders (universalisation).

- How coherent the vision is, in terms of the extent to which it is shared by stakeholders (closure).

- The practical choices made to realise the vision and its objectives (specification).

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[39]Chen H T (1990) Theory Driven Evaluation, Newbury Park, Sage. Patton  M Q (1986) Utilisation-focused evaluation, Sage, Beverly Hills
[40] Rossi, P H, Freeman, H E and Lipsey M W (1999) Evaluation: a systematic approach, Thousand Oaks, Sage

- The emphasis on and capacity for learning from the innovation or initiative, and hence its capacity to evolve and adapt in response to external and internal influences (situational change).

In practice, the proposed methodological approach had to be reduced in scope because of three factors. Firstly, time and resource constraints have limited the extent to which discourse and content analysis could be effectively applied. Secondly, given these constraints, it was not possible to gain access to a full set of baseline data for UKRC and the comparitors selected. Thirdly, a review of the literature demonstrated that the 'women in STEM' domain is highly contested, and there are no clear, accepted conceptual or technical tools to make comparisons on, for example, how 'mainstreaming' models can be represented and compared, or how 'success' can be measured.  As Walby (2005) observes "Gender mainstreaming is essentially contested because it is constituted in the tension between the mainstream and gender equality. There are many different forms of gender mainstreaming, not least because of the different visions of and theories of gender equality and of the social and political processes that might constitute routes toward such a goal." [41] For example, one typology of models of gender equality distinguishes between models based on sameness (equal opportunities or equal treatment), on difference (special programmes) and on transformation (Rees 1998). A parallel typology distinguishes between models of inclusion, reversal and displacement (Squires 1999b, 2005). Against this background, the 'discursive' element of the comparative analysis reflects a simple interpretative assessment, based on limited comparison of the 'key messages' projected by the initiatives selected. Finally, it should be borne in mind that these comparitors are not intended to be compared with UKRC on a 'like for like' basis. The three initiatives chosen were drawn from an initial review of 'women in STEM' initiatives and were selected to represent two European and one American example of support services that were doing broadly similar things to UKRC. In short, this part of the evaluation is intended to provide background to help situate UKRC in the STEM landscape, rather than provide a 'scientific' assessment of success or failure. In addition, the comparative assessment is intended to help UKRC learn from practices that are being adopted elsewhere.

## 6.3.  The comparative initiatives

The three initiatives selected for the review were:

- Competence Centre Women in Information Society and Technology, Germany. 'Kompetenzzentrum' is a not-for-profit organisation whose primary aim is to support the mainstreaming of gender equality efforts aimed at promoting the 'knowledge based economy' in Germany.

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[41] Walby, s (2005) Gender Mainstreaming: Productive Tensions in Theory and Practice,  Social Politics, Volume 12, Number 3, Pp. 321-343

- Association for Women in Science, USA. AWIS is a national advocacy organisation promoting the interests of women in science, technology, engineering, and mathematics across all disciplines and employment sectors.

- Resource Bank for Gender Mainstreaming in Science, Norway. This organisation was set up to support measures that can contribute to the mainstreaming of the gender equality efforts at the institutions within the university and college sector as well as the research institute sector.

## 6.4. Analysis

Table 6-1 below summarises the results of the comparative review of the four initiatives. It shows:

- All four initiatives share a common core goal of promoting gender equality in science, technology, engineering and mathematics. They also adopt a similar 'knowledge-based' strategy in working towards that goal by harnessing information and communication technologies to challenge existing economic, social, cultural and institutional structures and mechanisms that serve to maintain gender inequalities.

- There are significant differences between the four initiatives with regard to the 'cultural logic' that underpins their mission, values, objectives and activities. UKRC is arguably closer to the ideological position adopted by the US-based Association for Women in Science.

**Table 6-1: Comparative analysis**

| Initiative | UKRC | Kompetenzzentrum | AWIS | Resource Bank |
|---|---|---|---|---|
| Origins | Established to implement a substantial part of the Government's Strategy for Women in SET, (April 2003). | Founded in 1999. Driven more by agenda aimed at promoting national economic competitiveness against background of 'knowledge society' and EU Lisbon goals, than explicit 'gender mainstreaming' orientation. Adopts 'equal treatment' rather than 'positive action' ethos. | Founded in 1971 at the annual meeting of the Federation of American Societies for Experimental Biology. Participated in lawsuits, including successful suits to have the government enforce Affirmative Action and Equal Employment Opportunity. Direct links to US 'feminist movement' Persuaded a leading publisher to withdraw a new edition of a medical text that featured "Playboy"-style photos. | Set up in 2004 by the Department of Education. The Resource Bank is developed by KILDEN Information Centre for Gender Research in Norway, on assignment for Committee for Mainstreaming - Women in Science. The secretariat is placed at The Norwegian Association of Higher Education Institutions. |
| Links to government policy | Initiative directly linked to Government's 10 year investment framework for Science and Innovation. The strategy of the centre is driven in part by Baroness Greenfield's Report SET Fair 2002 and by the DTI's Strategy for Women in SET, 2003. Additional drivers are the Robert's Review 2002, Maximising Returns 2002. Mechanisms set up to bridge UKRC strategy and activities with policy – e.g. National Advisory Group | Partnership with German Federal Employment Agency. Representation from European Parliament | Played an instrumental role in developing the legislation that established the Commission on the Advancement of Women and Minorities in Science, Engineering, and Technology (CAWMSET) . Chaired the Science and Environment Task Force. AWIS President appointed to the National Leadership Council of Building Engineering and Science Talent | Directly funded by Norweigan Department of Education. Acts as platform to promote and support national legislation in gender mainstreaming |
| Funding basis | Government (35% from DIUS) European Commission (co-funded 75%). £7.5 m 2007. | Mixed. Membership subscriptions (individual and company) Project grants Company sponsorship | Mixed Membership fees Donations Sponsorship Revenue: $400k in 2007 | Financed by Department of Education |

| Initiative | UKRC | Kompetenzzentrum | AWIS | Resource Bank |
|---|---|---|---|---|
| Structure and Governance | Reports to Government (DIUS). Overseen by Advisory Groups (Implementation Group, reporting to Government Chief Scientific Advisor; Women and SET Group; National Advisory Group). Deploys range of sub-contractors to implement some activities (e.g. MentorSET; Science Council) | NGO. Executive Committee (15-30 members) includes representatives from European Parliament; federal and national Ministries, German Telekom, the federal agency for work, the Bielefeld professional school, commercial and media federations and associations and universities and research institutes | NGO. Distributed structure. National office in Washington. 50 chapters in over 30 states. Executive Board and Committees | Committee for Mainstreaming Women in Science. Norwegian Council for Higher Education; Research Council of Norway; Studentenes Landsforbund and Norsk Studentunion (student bodies); Department of Education |
| Networks and stakeholders | JIVE consortium(hosts UKRC)– Bradford College, Sheffield Hallam University, The Open University and the University of Cambridge. Professional Associations (e.g. Institution of Electrical Engineers); companies (e.g. Pfiser). The National Advisory Group and the Industry Board. Extensive network of partners and subcontractors. | Strategic partnerships with industry and media; professional associations; higher education; secondary education; government. Includes: Alcatel, Siemens, German Federal Employment Agency, Cisco Systems, German Federation of University Women, Deutsche Telekom, German Association of Women Engineers, Bielefeld University of Applied Sciences, Fraunhofer Institute, Society for Information Technology, International Networking for Educational Transformation; Network for the promotion of gender-oriented advanced | Founding member of The Global Alliance. AWIS created and co-chaired the first science and technology caucus for a UN Women's Conference. Key sponsors: Kellogg Foundation Exxon Mobil | Main networks are links with Higher Education and research institute sectors. |

| Initiative | UKRC | Kompetenzzentrum | AWIS | Resource Bank |
|---|---|---|---|---|
| Vision | Nationally coordinated strategy to reduced fragmentation and reinvention and aimed at overcoming occupational segregation. | IT education<br><br>The strategy of equal opportunity presupposes recognition of people's diversity, their varied biographies, lifestyles and capabilities and promotes the development of the potential and opportunities this diversity entails. It uses diversity as a success factor in achieving gender and generational equality in social development. | We envision a day when women will participate fully in science, technology, engineering, and mathematics as manifested through equal opportunity, pay equity, and recognition commensurate with their accomplishments | No specific vision statement. Implicit commitment to gender mainstreaming |
| Mission | It is the mission of the UK Resource Centre to establish a dynamic centre that provides accessible, high quality information and advisory services to industry, academia, professional institutes, education and research councils within the SET and built environment professions, whilst supporting women entering and progressing SET careers. | To actively help shape Germany's path towards becoming an information-and knowledge-based society. To this end, to develop and carry out a wide range of initiatives and projects that exploit the potential of women as well as men to make equal opportunity a reality in all spheres of society and work. | AWIS is a national advocacy organisation championing the interests of women in science, technology, engineering, and mathematics across all disciplines and employment sectors. By breaking down barriers and creating opportunities, AWIS strives to ensure that women in these fields can achieve their full potential. | The Committee's mandate is to support and give recommendations on measures that contribute to mainstreaming of gender equality work in the institutions in the university and college sector and in the research institute sector, and thus promote gender equality. |
| Objectives | To review and develop a recognition scheme for 'good' SET employers<br>To share good employment practice for women in SET<br>To disseminate and share information<br>To set up and maintain a | to strengthen media literacy and increase Internet use,<br>to foster new ways of thinking about career orientation and life planning,<br>to promote equal | Advocate on behalf of all women in STEM by: interaction with national legislative bodies and federal agencies; developing partnerships and alliances; advocate for the retention and advancement of women in scientific leadership | Provide a web based information resource to support policies and practices for women in STEM |

| Initiative | UKRC | Kompetenzzentrum | AWIS | Resource Bank |
|---|---|---|---|---|
| | database of expert women in SET<br>To maintain and disseminate UK gender statistics<br>To raise the profile of women in SET<br>To pump prime innovation and disburse travel bursaries<br>To support SET women returners<br>To coordinate the work of women in SET organisations | opportunity and excellence in higher education, science and research | positions; promote gender specific data collection; advocate to develop policies that increase gender representation on boards, conference programs, and committees; develop and provide public policy statements<br>Increase public and private support for women in STEM by: Increase and enhance the association's web and media presence; promote relevant research and establishment of accessible data bases; identify women in STEM to serve as spokespersons<br>Promote implementation of workplace and educational best practices by: Compile and disseminate comprehensive best practices; Partner with diverse institutions and organisations seeking to implement best practices<br>Strengthen connections among women across disciplines and work sectors by: Build membership in AWIS; Build chapters that provide value to AWIS members; develop cross-discipline and cross-sector networking<br>Increase the number of women in STEM<br>Increase the number of women who assume leadership roles at the national, local and institutional levels ( Promote leadership skills and | |

| Initiative | UKRC | Kompetenzzentrum | AWIS | Resource Bank |
|---|---|---|---|---|
|  |  |  | professional development; support nomination, recognition, and recommendation of women in STEM for leadership roles and prestigious awards) |  |
| Target groups | Undergraduate women in SET; Women working in SET; Women Returners; Employers; Higher Education, Education providers, Research Councils and research organisations. | Girls (career choices); Female students; Older women; Companies | Mainly women in higher education professions | Women in the university and college sector and the research institute sector. |
| Change strategy | Holistic model for change. Addresses eight inter-connected dynamics: Gender stereotyping and self stereotyping by girls and women; Family, friends and the media reinforcing stereotyping; School/options/qualifications; Careers education and advice; Education and training environments and pedagogy; Employment policies and practices; Professional Institutes/membership bodies/networks; Government legislation and policy | Three areas of expertise:. DIGITAL INTEGRATION - focuses on equal access to changed lifestyles and labour markets. TRAINING, FURTHER EDUCATION AND CAREERS - concentrates on gender-oriented vocational and life planning and the transition from school to work. HIGHER EDUCATION, SCIENCE AND RESEARCH -intensifies efforts to promote talented young women in relevant academic subjects and research. | Three integrated 'directions': Advocacy; Breaking Down Barriers; Capacity Building | Simple information dissemination approach; 'deficit model' |
| Delivery model | 'Hub and spoke' model centred in Bradford with 3 regional offices. Web-based and physical resource centres | Web based content repository; e-Learning; Community outreach; Regional working groups; Industry partnerships | Web based content repository; Community outreach; Regional chapters | Web based content repository |
| Activities | Strategies to return to work – | Target-group oriented | Information and knowledge | Information and knowledge |

| Initiative | UKRC | Kompetenzzentrum | AWIS | Resource Bank |
|---|---|---|---|---|
| | through the SET for Work scheme; Return Campaign; Mentoring schemes; Refresher programmes; Upskilling programmes Work with employers – focusing on culture change; providing change management and consultancy; providing information and advice; implementing awards schemes and kitemarks; supporting best practice sharing Strategy and policy – focusing on developing partnerships to influence policy and provide advice to government and industry Widening choice – focusing on expanding horizons for example through Travel Bursaries; GetSET Women database Retention and progression in education and employment – supporting more effective transition pathways for example through Information and knowledge sharing; Grants to Universities for support structures; pump priming grants and research awards Profile raising implementing Role model campaigns; newsletters | project and campaign development Event and project management Studies and expert opinions Consulting and benchmarking Development of course and training concepts Networking Job searching Events Brochures and publications | dissemination Advocacy Awareness raising (e.g. through role models) Workplace best practices Internships Scholarships/Fellowships Educational Foundation Mentoring Volunteering Job Search Publications Statistical data collection and database Newsletter Events On-line shopping | dissemination through: list and case examples of recommended practices; employment opportunities advertising; statistics on women in STEM; list of publications on gender mainstreaming in STEM; relevant laws and regulations; links to 50 websites providing resources for women in STEM |

- Both reflect a 'transformative' conceptualisation of gender – in the AWIS case it is possible to trace directly the legacy of feminist perspectives in shaping the origins and evolution of the organisation. By contrast, Kompetenzzentrum occupies what might be described as a 'pragmatist' or 'realist' position in the 'women in STEM' landscape. It originated and has evolved in response to national and European policy agendas that have primarily been shaped by the 'Lisbon goals' – to make the EU and member states the most competitive economies in the world. In this context, Kompetenzzentrum adopts a 'human capital' logic, recognizing that women currently play an under-utilised role in building the knowledge economy. As a result, its gender equality model reflects an 'equal treatment' stance. In both the UKRC and the Norweigan initiatives mission and values are more directly influenced by specific Government policy and legislation governing gender mainstreaming.

- AWIS and Kompetenzzentrum are arguably more grounded than UKRC in terms of their societal and cultural embeddedness and diversity and range of networks. Whilst it should be recognised that UKRC's remit is to some extent restricted by government – for example it is not intended to play any significant role in the school environment and has been charged with focusing on Higher Education – both AWIS and Kompetenzzentrum exhibit strong 'grass roots' identity and outreach activities, AWIS with its distributed regional infrastructure of 'chapters' and Kompetenzzentrum through projects like 'Girls Day' (involving over 300 regional groups) and 'Online-Years' (a programme for the 50-plus generation). In addition, Kompetenzzentrum is more deeply embedded in the commercial and industrial environment. In the case of UKRC, its remit means that the grass roots connections of centre and some of the hubs are less prominent in its activities.

- None of the initiatives have developed an explicit 'theory of change' that specifies a particular causal relationship between 'mission' and expected outcomes and impacts. However, it is possible to identify strategic orientations that are intended to lead to change. Three of the initiatives adopt a similar change strategy, focusing on addressing gender stereotyping; capacity-building; skills development and policy development. The Norweigan 'Resource Bank' is alone in adopting a single-theme approach, based on what can be described as a 'deficit model' – seeking to address gaps in the information and knowledge available to stakeholders within the STEM environment. Of the three 'integrated' initiatives, UKRC adopts probably the most sophisticated – and complex – change strategy, with its 'holistic' model. More significant differences between the three can be identified in terms of the delivery models used to effect change. Whilst all four initiatives have invested significantly in developing on-line content repositories, UKRC's 'hub and spoke' model contrasts with the 'distributed' models adopted by AWIS and Kompetenzzentrum that utilize extensive local networks to deliver community outreach programmes. These differences are paralleled in the organisational and governance structures adopted. Whereas UKRC and the Resource Bank are dominated by governmental and higher education representation, AWIS and Kompetenzzentrum incorporate a wider spectrum of sectoral, spatial and stakeholder perspectives.

- The more complex 'holistic' model adopted by UKRC is instrumental in shaping how its service model is configured. As Table 6-1 shows, the Centre provides an extensive spectrum of information and support services to a wide range of target users, including 'returner' initiatives (SET for Work scheme; Return Campaign;

Mentoring schemes; Refresher programmes; Upskilling programmes); work with employers; strategy and policy development; Travel Bursaries; information services, like the GetSET Women database; Grants to Universities for support structures; pump priming grants and research awards; profile raising. Both AWIS and Kompetenzzentrum provide similar services, notably Information and knowledge dissemination; profile-raising; upskilling programmes; scholarships and education. AWIS's distinguishing characteristic is arguably the emphasis is places on advocacy – in particular drawing attention to failures by government and industry to fully implement gender mainstreaming legislation. Kompetenzzentrum's distinguishing characteristic is probably the emphasis placed on the 'opportunity of diversity' and its commitment to media literacy.

- Further contrasts between the initiatives can be discerned in relation to funding. Both UKRC and the Resource Bank rely heavily on support from government. AWIS and Kompetenzzentrum adopt a diversified funding model that combines membership fees with sponsorship, donations, research grants and, in the case of AWIS, on-line retailing (Figure 6). Although financial data were not available for the Resource Bank and Kompetenzzentrum, UKRC appears to enjoy a significantly more favourable funding regime than AWIS.

**Figure 6: AWIS online shopping items**



## 6.5. Lessons for UKRC

As discussed above, the comparative assessment is intended to provide background to help situate UKRC in the STEM landscape, rather than provide a 'scientific' assessment of success or failure. In the absence of data on relative outcomes and impacts, it is not possible to make a judgement on whether the models adopted by one initiative are more effective than others. However, the assessment has thrown light on some issues that UKRC and its sponsors might profitably reflect on. These are as follows:

- Change strategies. The comparative analysis broadly supports the 'holistic model' adopted by UKRC. Both AWIS and Kompetenzzentrum are doing broadly similar things to UKRC and the 'integrated' model, combining elements of culture and institutional change with educational development; skills programmes and information services, is a common theme across all the initiatives with the exception of the Norweigan Resource Bank. Whether the more complex model adopted by UKRC is a more effective one remains an open question. In turn, the

review shows that different 'gender equality' models operate in the different initiatives. UKRC and AWIS are situated more in the 'transformative' sphere, whilst Kompetenzzentrum occupies a 'human capital' position. The relative merits of the different 'cultural logics' adopted are poorly understood and this is an area that could benefit from further exploration.

- Diversified funding models. The review makes a strong case for at least looking into the potential value added of a diversified funding base that incorporates revenue from sources like membership fees.

- Delivery models. AWIS and Kompetenzzentrum appear to have capitalized successfully on their extensive local and regional networks. This creates opportunities to draw on resources, through volunteering programmes; grass roots support and lobbying, to add value to activities like advocacy, awareness and profile raising and partnership development.

- Institutional structure and Governance. AWIS and Kompetenzzentrum arguably reflect a more grounded institutional and governance structure than UKRC, with greater 'grass roots' embededness and broader stakeholder representation – particularly, in the case of Kompetenzzentrum, with industry and 'society' in general. The review suggests that exploring a more diverse and broader institutional and governance structure for the Centre could reap benefits. It should be noted, however, that UKRC has initiated a process of updating its governance structures. This includes provision for an Industry Board, together with a new Governing Body. This should provide opportunities for strengthening its position within the broader industrial and societal fabric.

# 7. WHAT DOES UKRC DO?  ACTIVITIES ASSESSMENT

## 7.1.  Introduction

This section presents an assessment of UKRC's work, set against its remit, mission and objectives and the Centre's work programme as envisaged in the Government's 'Strategy for Women in Science, Engineering and Technology, and the associated 'holistic model for change' that sets out the basis for the Centre's operations. The assessment is based on a review of relevant documentation and statistics and the Centre's submission of data in response to an 'activity audit' framework compiled by the evaluation team. The assessment focuses on: the core tasks of UKRC's strategic programme and how these are implemented; the main outputs produced by the Centre with regard to these tasks and activities; the beneficiaries and users of UKRC's outputs; the potential outcomes and impacts for beneficiaries and users; the relative distribution of resources expended on activities.

## 7.2.  Overview: tasks, activities and outputs

Figure 7: UKRC core tasks below presents a schematic of the Centre's work. As Figure 7 shows, the UKRC work programme integrates nine core tasks. These incorporate:

- implementing a recognition scheme for 'good employers, primarily based on awards and kite marks to recognize achievements in promoting gender equality;

- promoting sharing of good practices (through liaison; training and implementing a 'culture analysis' tool with employers);

- disseminating and sharing information (through Research; developing a Bibliographic database and promoting it on the Website; collating and disseminating 'Personal stories'; delivering an Annual conference; producing and distributing the Centre's 'Progress' Newsletter; sponsoring and attending conferences workshops; providing News on SET developments; producing the one-off 'Spark' Magazine funded through the WISE campaign; running an Information/enquiry service; collating Publications; advising on Policy; implementing Publicity and PR campaigns; providing Information on courses

- Assembling and making available the 'GetSet Women' database online. This is primarily intended to raise the profile and engagement of women in media-related scientific activities

- Compiling and providing statistics on women in SET

- Raising the profile of women in SET through: an annual Photographic Exhibition; promoting discussion on representation of women scientists in TV drama; Media training; a 'WISE' Poster Campaign; raising the profile of women in SET research; compiling a list of science pioneers; collaboration with PAWS on script writing; delivering events on profile raising

- Research and pump-priming activities – supporting organisational and individual innovation in SET and providing travel bursaries

- Supporting women returners – through delivering Open University courses, the Year in Industry initiative, work with the Womens Engineering Society, the Cardiff Womens Workshop, Equalitec, L'Oreal bursaries, Oxford Womens Training, the Return Campaign, Positive outcomes, a job matching service, providing an advisor through JobshareUK, Mentoring for Public Life training; setting up and supporting Mentoring circles, delivering the 'MentorSET' initiatives, supporting other mentoring projects, providing travel bursaries

- Co-ordination work with women in SET organisations, including direct funding for some initiatives, organisation of meetings and events and inclusion of a women in SET organisaitons in the National Advisory Group.

**Figure 7: UKRC core tasks**

## CORE TASKS

| 1. Recognition scheme for 'good' SET employers | 2. Share good employment practice for women in SET | 3. Disseminate and share information | 4. Database of expert women in SET | 5. UK gender statistics | 6. Raise profile of women in SET | 7. Pump prime innovation; travel bursaries | 8. Support SET women returners | 9. Co-ordinate SET organisations |
|---|---|---|---|---|---|---|---|---|

## ACTIONS

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Kite Mark Athena Swan Charter Manufacturing Excellence (MX) Awards: UKRC Award for Diversity and Inclusion | Good practice guides Gender equality training Employer Liaison Set entrepreneur-ship 2012 Games Swan Charter Evaluation Champions for Flexibility Best practice case studies CEO Charter Culture Analysis tool Sponsorship | Research Bibliographic database Website Personal stories Annual conference 'Progress' Newsletter Conferences Workshops News 'Spark' Magazine Information/ enquiry service Publications Policy Publicity/ PR Information on courses | GetSet Women database | Statistics | Photographic Exhibition Discussion on representation of women scientists in TV drama Media training WISE Poster Campaign Raising the profile of women in SET Research List of science pioneers Collaboration with PAWS on script writing Events on ... | Projects for individuals and organisations | OU course, Year in Industry, Womens Engineering Society, Cardiff Womens Workshop, Equalitec, L'Oreal, Oxford Womens Training, Return Campaign, Positive outcomes, Matching Service, JobshareUK Mentoring for Public Life Mentoring circles MentorSET Mentoring projects Travel bursaries | Direct funding, meetings / events, one organisation represented in NAG |

**Figure 8: UKRC framework for action, government tasks and activities**

6. Collaboration with PAWS on script writing

6. Media training

6. Events on profile raising

6. Discussion on the representation of women scientists in TV drama

6. Women into Science and Engineering (WISE) Poster Campaign

6. Photographic Exhibition: women of outstanding achievement

6. Raising the profile of women in SET

6. List of science pioneers

See activities above

6. To raise the profile of women in SET

6. To raise the profile of women in SET

6. To raise the profile of women in SET

5. To maintain and disseminate UK gender statistics

4. To set up and maintain a database of expert women in SET

3. To disseminate and share information

3. Information on equality

5. Statistics

3. Annual Conference

3. Conferences and workshops

3. Personal stories

3. Bibliographic database

3. PR and ResearchComs team

3. Progress and Spark newsletter

3. Website

3. Information on courses

Family, friends and the media reinforce stereotyping

Schools / options / qualifications

Gender stereotyping and self-stereotyping by girls and women

Careers education and advice

Government legislation and policy

Education and training environments

Professional Institutes / membership bodies / networks

Employment policies and practices

8. To support SET women returners

4. To set up and maintain a database of expert women in SET

2. To share good employment practice for women in SET

9. To co-ordinate the work of women in SET organisations

1. To review and develop a recognition scheme for 'good' SET employers

3. To disseminate and share information

6. To raise the profile of women in SET

7. To pump prime innovation and disburse travel bursaries

8. Working with government on aim of 40% female representation on SET public bodies

8. Oxford Women's training

8. Matching service

8. Mentor SET

8. Positive Outcomes

8. Mentoring projects with employers

8. SET recruitment consultant at Jobshare

8. Mentoring for Public Life Programme

8. Programme of training and development

8. Mentoring resources on website

8. Equalitec

8. Get Set Women

8. T160/161 courses with OU

8. Year in Industry

8. Women's Engineering Society

8. L'Oreal

8. Peer mentoring circles

8. Return Campaign

8. Travel Bursaries

8. Cardiff Women's Workshop

Workshops and events

Annual Conferences

Partner relations

Direct funding

SET Directory

Training

1. Kite Mark

1. Athena Swan Charter

1. Manufacturing Excellence (MX) Awards: UKRC Award for Diversity and Inclusion

2. Good practice guidelines

2. Bespoke gender equality training for employers, employer liaison, support with champions for employer flexibility scheme

2. Employers team salaries

2. SET entrepreneurship

2. 2012 Games

2. SWAN Charter Evaluation

2. CEO Charter

2. Culture Analysis tool

2. Sponsorship opportunities for employers

2. Champions for flexibility

7. Projects for individuals and organisations
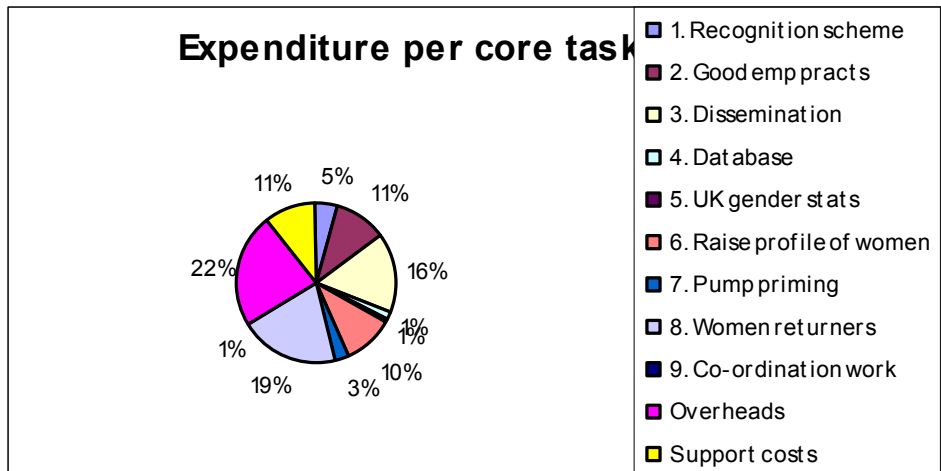
2. Best practice case studies

## 7.3. Distribution and relevance of activities

The figure above illustrates, the spectrum of activities covered by this work is wide, diverse and complex. Figure 9 below shows the distribution of expenditure on these nine core tasks over the period 2004-2008.

**Figure 9: Expenditure per core task**



*Source: Budget figures provided by UKRC*

As this chart shows, setting the support and overhead costs of running the Centre aside (including the salaries of the Director and the Acting Director) , the largest concentrations of UKRC investment in resources are in the women returners activities (19%), Dissemination work (16%) and sharing good employment practice (11%).

As Figure 10 below shows, the emphasis on these different core tasks has not changed significantly since the Centre's launch. Investment in the Women Returners programme has increased vis-a-vis other core tasks, in line with investment in promoting good employment practices. Since changing the culture of the workplace and getting more women into SET occupations are arguably the priority areas for UKRC, these trends could support the view that UKRC's 'action strategy' since its launch has broadly been an appropriate one. However, it is less clear whether the sharp increase in expenditure and the prominence given to dissemination activities reflects work of similar importance and relevance.

**Figure 10: Changes in expenditure on activities**
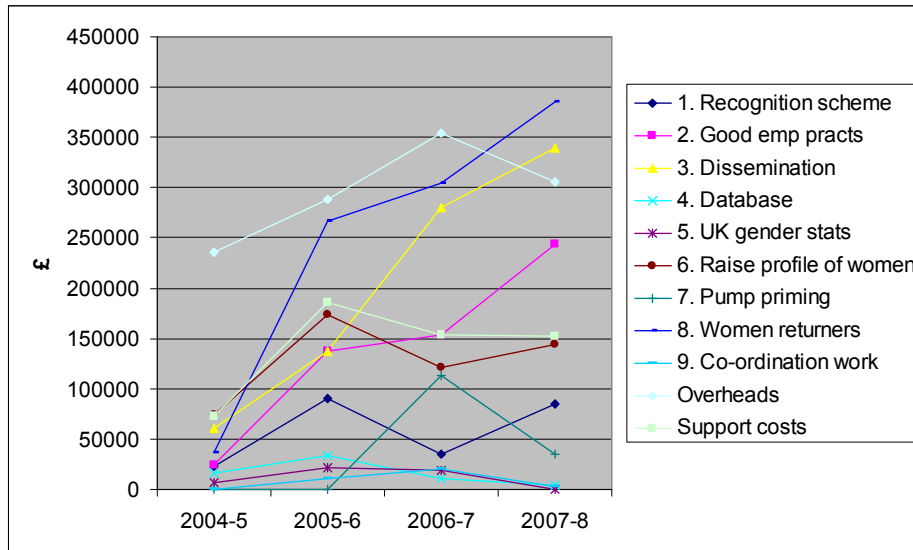


*Source: Budget figures provided by UKRC*

## 7.4.  Outputs and outcomes

The Table 7-2 below below summarises the results of the work undertaken by UKRC, its partners and sub-contractors across each of the nine core task areas. As Table 7-2 shows, UKRC has produced an extensive and diverse range of products and services, targeting a wide spectrum of important stakeholders in the women in SET landscape. The areas where the evidence suggests that UKRC's work is likely to make a significant contribution to policy and practice objectives for women in SET are as follows:

### 7.4.1.  Areas of likely significant contribution

**Work with employers**

Recognising and rewarding good employers. The Athena-Swan Charter currently includes 26 higher education institutions. This represents a relatively important sector where employment position and job progression for women in SET is demonstrably worse than it should be.

A generic outcome of UKRC's work with employers to date, which is likely to be significant for the Centre's future work, is the fact that it appears to lead to strong relationships.  Several of the employers we interviewed commented positively on the quality of relationship with UKRC, which was described as being "of value to us" [S26] and as "good, very positive and understanding" [S34]. Another reported that working with UKRC had been a "very positive experience, I'm sure we built up a very strong relationship" [S19].  Most employers interviewed (4), therefore, reported an intention to

work with UKRC again or keeping ongoing contact in view of a possible further collaboration (1).  A couple of suggestions were made on how work with employers could be improved which might support UKRC's work with employers:  the appointment of an 'account manager' as a single point of contact for employers, for instance,  or focusing on pushing out bespoke information to employers.

## Information and research

- Disseminating and sharing information.  The Centre's on-line Content Repository is the focal point for a range of information and support services that combine to raise awareness of the issues; provide valuable resources for users and provide a platform for extensive collaborative knowledge creation and knowledge sharing.

- UK gender statistics. The Centre collects and collates statistical data in an efficient and effective format that addresses hitherto existing gaps in the provision of such information.

- Pump priming innovation and disbursement of travel bursaries. UKRC have supported a number of important research projects and pump priming initiatives that would otherwise not have been possible. (This aspect of the work is covered by a detailed 'case study' in this evaluation Report)

## Supporting SET women returners

This is a key element of UKRC's remit and holistic model for change. A number of constituent elements of this work are likely to make a positive contribution to addressing current skills gaps in the UK SET economy. In its various forms the Returners campaign has benefited over 1,300 women, exceeding its target by 300. Particular successes have been the returners' courses run by the Open University has engaged 675 participants (making a potentially significant contribution to expanding the estimated total of 7,700 women currently engaged in SET occupations in UK higher education institutions) and the MentorSet programme (almost doubling its target of 100 participants).  UKRC exceeded its target of 300 positive outcomes by 47 participants.

Indeed, the employers interviewed for this study who had engaged with UKRC women returners activities reported that UKRC's work is unique in this area in its ability to place women, understand business needs to plug skills gaps and ability to offer recommendations. Reported benefits of engaging with UKRC include the addressing of skills shortages and understanding where the organisation used good practice on which it could build to develop other areas.

Women participants interviewed as part of this evaluation also report a range of outcomes. From these interviews, a number of key themes emerged relating to the 'usefulness' or value respondents attributed to them. They included provision of peer support and associated reduction in isolation, the provision of confidence, and facilitating access to opportunities and information.

- **Peer Support**. For many of the women interviewed, contact with UKRC represented both their first recognition of other women in similar positions to themselves and their first opportunity to meet such individuals. " *I was surprised by the fact that there were a lot of people like me who could not say exactly what they wanted to do when they 'grew up', but could say what they didn't want to do"* (W18). Activities which provided women with a chance to access peer support and share and listen to experiences similar or related to their own were particularly valued. *"It is encouraging when you hear yourself talk through someone else… when other people are saying the same thing as you"* (W11). *'Listening to other people's experience helps to show that you are not on your own"* (W4) Respondents expressed that these opportunities reduced their sense of isolation, bolstered confidence and validated their life choices and experiences. There was a strong sense among many respondents that this contact helped to remove the sense of embarrassment or shame which many expressed about having taken time away from work and increased their confidence in approaching employers and explaining these absences. One respondent noted how she now recognised she didn't "*have to apologise for taking time off*" [W16].

- **Facilitating access to opportunities and information /Communication.** Effective signposting and communication was an area highlighted by a majority of respondents. Several comments were made about the effectiveness of UKRC staff at 'keeping in touch' and striking an appropriate balance between providing too much and too little information. The distribution of information 'tailored' to individual's specific interests and a "*proactive approach*" providing advance warning was particularly welcomed and seen as effective. These activities and the approach were described as motivating and providing a "*gentle nudge*" ("*what I needed*") [W1]. The level of personal as opposed to remote contact was also noted as important *"there is no substitute for personal contact".* Support for the costs of travel expenses and childcare were both noted to be key for particular individuals in facilitating access to both UKRC activities and work based placements. Likewise facilitating contact with employers and placement opportunities relevant to the individual was particularly welcomed and there were requests for increased numbers of this type of opportunity. A number of respondents expressed surprise and satisfaction with the relevance and specificity of employment or placement opportunities in meeting their specific needs.

Table 7-1 below shows those aspects of UKRC that respondents to the participants' survey found most useful:

Table 7-1: Most useful aspects of UKRC

| Q12. What aspects of UKRC did participants find most useful?[42] | % |
|---|---|
| T160 course | 22% |
| Mentoring | 20% |
| Facilitating access to workshops and events and conferences | 17% |
| Provision of bursaries and financial assistance (*not including pump prime* | 15% |

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[42] Please note that many respondents identified more than one aspect which they found 'particularly useful' and subsequently percentage responses do not add up to 100%.

| Q12.  What aspects of UKRC did participants find most useful?[42] | % |
|---|---|
| *grants*) | |
| Facilitating access to opportunities for networking | 11% |
| Facilitating access to training | 11% |
| Provision of Information | 9% |
| Courses (non T160) | 6% |
| UKRC Website | 6% |
| Facilitating access to opportunities for peer support | 6% |
| Facilitating access to conferences | 6% |

*Source:  Evaluation of UKRC, participants' survey*

It could be argued that some target groups and 'scenarios of action' remain relatively under-represented in the current spectrum of UKRC activities. Specifically, there is little evidence of significant investment in work targeting 'hard to reach' groups, such as women from black and ethnic minority communities, women with lower educational qualifications and women in lower paid or less well qualified occupations.[43] The dominance of the higher education community, and women in higher status occupational environments, contrasts with the more muted voice of grass roots and community-based networks in UKRC's engagement with SET constituencies – or potential constituencies. Similarly, though policy-makers are engaged in a number of activities undertaken by the Centre – for example through its research; promotional work and statistical analysis – this constituency appears relatively less represented compared with other stakeholder groups. In turn, there are some areas where questions could be raised about the value of particular activities, and areas where evidence on outcomes and impacts of activities seems less than robust.

In addition, the beneficiaries interviewed had suggestions for improving the women's services in two broad areas:

- **Relevance**. A number of comments were made about the lack of relevance of certain group based activities to individuals. While some mentioned that activities were "*generic*", another felt that the focus was on IT and engineering rather than bioscience. Another respondent noted that on workshops a number of assumptions were made about why and for how long participants had been away from work, which did not apply in her particular case. Despite these comments most respondents acknowledged that the diversity of experiences and needs among participants created a somewhat inevitable difficulty of pitching activities appropriately for everyone. One suggested response was greater emphasis on grouping people together by specific needs.  It was also noted that networking opportunities for recent returner's would also be welcomed to support the ongoing needs of women once they had accessed employment

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[43] Though UKRC's aim for the period from 2008 onwards is to integrate diversity across all activity and give specific focus to dedicated work on the position and participation of BME women in SET.

- **Raising Profile**. Another area where some beneficiaries felt improvements could be made was in relation to publicising the services of UKRC. Many participants felt that they had come into contact with the centre by some degree of chance: *" I worked in science for years and hadn't heard of them"*. It was noted that one participant who had heard of UKRC prior to her involvement with the T160 course had assumed UKRC wasn't relevant to her. She had assumed it was an "*old fashioned networking organisation ..aimed at highly qualified women members of the scientific community.. I thought it was a bit like the soroptimist club for women professionals"* (W9) Additional suggestions of possible improvements included requests for more locally based activities and support to facilitate women's access to online journals and recognising the difficulty of accessing up to date research when home based.

## 7.4.2. Areas with potentially lower contribution

Of the 19 activities for which a specific target has been specified by UKRC, 6 activities failed to reach that target. These, and other activities where outcomes and impacts appear to be contributing less than might be expected, include:

- The Culture Analysis tool. 42 companies have completed this exercise, at a total cost of just over £50,000 in UKRC resource expenditure. The case study work on two employers undertaken as part of the JIVE evaluation[44] indicates that the CAT has made a difference to individual employees and managers in both organisations researched most notably in improved awareness of gender equality issues resulting in incidences of behaviour change but at least in one case support beyond the CAT tool was accompanied by further support. The report further argues that "the high-level impact of the CAT on organisational practices and cultures, and consequently on the recruitment and retention of women, is hard to assess at such an early stage in these change processes."[45]

- Kite Mark – only 2 companies have so far been awarded a UKRC 'kite mark', and 35 entrants to the Manufacturing Excellence (MX) Awards and UKRC Award for Diversity and Inclusion (against a target of 75). Although it is difficult to set these figures against relevant benchmarks, and for one of the employers interviewed as part of this research the award was a prompt to look at women's needs, it seems a very small incursion into the estimated 10,000 UK companies currently engaged in SET activities – not including construction (200,000) and health (40,000), and against UKRC's own target of 75 companies.

- Champions for flexibility – similarly only 2 companies have applied for grants under this initiative.

- The 'GetSet Women' database. Against a target of 2,000 women aimed for, the database contains just over half that number, and only 400 of these are 'active'.

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44 Shepherd, D and Webster, J (2007) The Impact of the JIVE Cultural Analysis Tool on the creation of cultural change amongst employers. November 2007. Examples of use are also provided in: Silk, A and Swiszczovski, L (2007) CATalyst for Culture Change: How can Employers retain Women in SET?" Women in Engineering and Technology Research, Prometea International Conference, Paris (France), October 26-27
45 Shepherd, D and Webster, J (2007) The Impact of the JIVE Cultural Analysis Tool on the creation of cultural change amongst employers. November 2007, p. 7

Moreover, the evidence suggests there has been virtually no demand from media institutions to use the database.

- The 'Year in Industry' initiative. This has engaged 12 participants against a target of 30.

- The UKRC 'Peer Mentoring' initiative. This has engaged just 122 women (either in one-to-one relationships and in the peer mentoring circles) set against a target of 300.[46]

### 7.4.3. Areas where the relevance and value added of activities is not clear

These include:

- Dissemination activities. As outlined above, significant resources are expended on a range of activities, products and services intended to raise awareness and circulate the results of UKRC's work among stakeholder groups. These include dissemination vehicles like the 'Progress' Newsletter and 'Spark' magazine, the online information enquiry service and the publications and documents repository (the Bradford-based library). For example, with regard to the Bradford-based library, our survey of women participants suggests that only 6.3 per cent of respondents had used the library. Of these, more than half gave it a 'neutral' satisfaction rating. More evidence of who is using these services; for what purposes, and with what benefits, would be useful.[47]

- Perhaps more importantly, there is little evidence that UKRC is developing and implementing an 'organisational learning culture'. Much of its dissemination work appears to be done in 'transmissive' mode, operating on what might be called a 'deficit model' of information and knowledge creation and diffusion. Few mechanisms are built into the infrastructure for feedback from stakeholders, and few opportunities can be identified for collaborative learning between stakeholder groups themselves, and between them and UKRC. In addition, UKRC in its own organisational culture does not appear to devote much attention to building in space and opportunity for reflection on how its strategies and activities are working, using evidence compiled from monitoring and evaluation to apply learning to promote organisational development.

- The CEO Charter – 30 companies have been signed up, 26 of which in the last quarter of 2007. Whilst our interviews with employers suggest that top level support for diversity issues is important for organisational culture, the data collected as part of this evaluation, combined with the short period of time most CEO Charter participants have been engaged with this activity, does not allow us to make a more definite assessment of the relative contribution of this activity at this point.

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[46] Looking forward, URKC have developed a Peer Mentoring Handbook and are encouraging the hubs to pursue setting up the circles. It will remain to be seen how this impacts on uptake over the next few years.

[47] At the time of writing, for instance, download figures of documents on the website and information on postal requests could not be accessed.

- Policy engagement – how effectively UKRC engages with the policy environment, and what contribution it makes, is not clear.[48] Many of the stakeholders interviewed for this study were unable to comment on UKRC's contribution in this area. The production of statistics and responses to government policy or parliamentary questions prepared are recognised as policy engagement, and other factors mentioned include the connection to DIUS [S7] as well as raising awareness and making it acceptable to talk about women in SET issues more widely [S7, S4, S34, S35]. However, individuals express the view that dialogue needed to happen at a much higher level [S12] and another stakeholder felt that the organisation lacks awareness of how government works [S33].

- Publicity and Public Relations. A significant amount of resources - £450,000 since the Centre's launch – is devoted to publications, publicity and PR. These activities are aimed at marketing UKRC services and raising its profile. More evidence of the contribution these activities make would be useful.

- In turn, a diverse range of activities have been carried out by UKRC under the strand of work aimed at 'raising the profile of women in SET'. These range from high profile initiatives like the annual 'Photographic Exhibition' through discussions on the representation of women scientists in TV drama; collaborations on screen writing; training on how to make presentations in the media; poster campaigns; profiles of 'science pioneers' and other profile raising events, for example two seminars at the Science and Innovation Conference in London. The underlying rationale for these activities, and their expected outcomes, focus on things like addressing the processes that contribute to stereotyping; providing inspiration to women; raising the visibility of women scientists and engineers; developing skills and promoting self-confidence. It is not clear what the outcomes and impacts associated with many of these activities are, given their symbolic nature and focus on changing attitudes.

- GetSet Women database. As noted above, the 'GetSet Women' database is intended to provide a resource for the media. However, the evidence suggests there has been virtually no demand from media institutions to use the database.

- Co-ordination work. This in principle should be an important aspect of UKRC's work, since part of the Centre's remit is to reduce the fragmentation that currently exists within the 'women in SET' landscape. However, the contribution of the activities undertaken to date to achieving this goal is unclear, if not questioned by the wider stakeholder community.


## 7.5. Cost, value and effectiveness

This section looks at the relationship between resource expenditure and UKRC activities. Whilst it explores some of the links between spending and outcomes, it is not intended to provide an assessment of the cost-effectiveness of the Centre. The lack of systematic and comprehensive data on impacts associated with particular UKRC activities – for example the results of a randomised controlled trial of the career behaviours of women

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[48] Though a range of contributions has been made, as outlined, among others, in the November 2007 progress report to the NAG.

who have participated in a 'Returners' initiative compared with those who have not – place significant restrictions on calculating cost-effectiveness. In addition, the extensive, and disparate range of activities carried out by the Centre includes elements that are based on 'intangibles', for example publicity and public relations.  This section therefore presents a 'broad brush' interpretation of what resources are spent on which activities, highlighting instances that appear to represent positive value and those where value is less clear.

**Table 7-2: Activities and results of UKRC work by core task**

| Activity[49] | Outputs | Expected outcomes | Beneficiaries | Outcomes |
|---|---|---|---|---|
| **1. Recognition scheme for 'good' SET employers** | | | | |
| Kite Mark | Award of kite marks | | Employers | 2 awarded |
| Athena | ASSET - National survey on factors influencing pay and career success in SET | | HE sector and women, professional institutes | 1 survey -6000 respondents |
| Athena Swan Charter | Awards made to higher education institutions/depts to recognise excellence in the retention and progression of female scientists | changing employment practice within HE SET departments to ultimately smooth the progression of women in SET | Employers (HEIs) | 26 institutions |
| Manufacturing Excellence (MX) Awards: UKRC Award for Diversity and Inclusion | Companies signed up as interested in the Diversity and Inclusion award | | | 26 companies |
| **2. Good employment practice for women in SET** | | | | |
| Good practice guides | Good Practice Guide | To share best practice | employers | 11 guides |
| Bespoke gender equality training for employers, employer liaison, support with champions for flexibility scheme - flexible resource | Bespoke gender equality training for employers, employer liaison, support with champions for flexibility scheme - flexible resource | to develop awareness amongst SET community on gender issues in SET; to provide a flexible resource to the UKRC central team for employer liaison | Employees from industry, FE and HE sectors, sector skills councils | 316 individuals trained |
| **3. Disseminate and share information** | | | | |
| Employer Liaison work | Largely a focus in the FE sector and industry | | FE and industry | 1FTE working |

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[49] The source for this data is an activity spreadsheet completed by UKRC for this evaluation. Blank cells or those with "no data" information mean that no information was provided. However, this may have been due to time pressures compiling this information. Further details may be available from UKRC on request.

| Activity[49] | Outputs | Expected outcomes | Beneficiaries | Outcomes |
|---|---|---|---|---|
| Set entrepreneurship | information resources for women SET entrepreneurs, 3 published articles, 1 research report and conference, supplier diversity training, case study booklet. | To embed SET as a sector into the work of the leading women's enterprise agency; to disaggregate entrepreneurship data by SET | SET women led business owners; policy makers, women thinking of setting up | 300 women led companies |
| 2012 Games | To produce a report with recommendations for the UKRC forward strategy | To identify sources of funding and recommend the most effective activities for the UKRC 2008-12. UKRC also gave a significant input into the ODA's E and D strategy and is referenced in the ODA strategy | Members of the steering group from prof institutes, sector skills councils, RDA's, ODA, GLA | 40 |
| Swan Charter Evaluation | Evaluation report | To evaluate the effectiveness of the Swan Charter , to make recommendations to inform its development | the funders (UKRC and EU) and the AS steering committee | 1 Report |
| Champions for Flexibility | Champions for Flexibility schemes to introduce flexible working. Final Report of the scheme by UKRC, evaluation of the Sheffield Uni WARN scheme, Oxford Innovation scheme produced a good practice guide, CD rom for employers | Testing flexible working in SET environments | Companies wanting to test ways of piloting flexible working | 2 grants awarded to Uni of Sheffield and Oxford Innovation Ltd |
| Best practice case studies on website | Good practice guides also include case studies as well as individual case studies of good practice on web site | to share good practice to employers | employers | 11 case studies- on website |
| CEO Charter | Companies signed up to CEO charter. Each company get a framed certificate | The Charter is a visible commitment from the CEO or top management of organisations within science engineering and technology to implement positive culture change to increase the participation and | Employees and Employers | 30 companies |

| Activity[49] | Outputs | Expected outcomes | Beneficiaries | Outcomes |
|---|---|---|---|---|
| | | progression of women | | |
| Culture Analysis tool | Cultural Analysis Tool carried out and report produced. | | | 42 completed |
| Sponsorship opportunities for employers | Sponsorship | Company culture audited and reported on - action plan drawn up | Employers and employees | £12k from 6 organisations |
| Research | Research reports produced internally and externally | To fill gaps in the evidence base | Employers, SET community, researchers, women, policy makers | 12 research reports to estimate 1000+ - UKRC conference, events, downloads, conference papers given by researchers |
| Bibliographic database | Comprehensive bibliographic database set up on website and updated regularly | To provide centralised resource of academic and policy reports relevant to women in SET | policy makers, researchers, SET community, women | 3,954 items on the Publications catalogue |
| Website | | to disseminate the work of the UKRC and to raise awareness of the issues of women in SET | women, employers, professional institutes, media, SET community, women getting into SET, women seeking progression | 160,000 approx |
| Personal stories | case studies of women in SET | To promote SET careers to women | | 116 case studies on website |
| Annual conference | Annual Conference | to promote the work of the UKRC and to develop awareness and knowledge on themes of the conference, to provide networking opportunities and to share best practice | women, employers, professional institutes, media, SET community, | 4@250 delegates=1000 plus the conference reports |

| Activity[49] | Outputs | Expected outcomes | Beneficiaries | Outcomes |
|---|---|---|---|---|
| Progress Newsletter | Quarterly newsletter | to share best practice, communicate with the SET community | SET community, employers and women | 14 issues. 2000 distribution per issue directly mailed |
| Conferences and workshops | events and workshops - for instance, employer best practice events, media training, play your part public body events, | sharing best practice, building capacity | women, employers, professional institutes, media, SET community, | UKRC report a 'lot' |
| News | SET sector and equality information drawn from the news, reports etc | sharing and spreading best practice | employers, SET community, researchers, policy makers | 138 news items on the website |
| Spark Magazine | | No data | No data | No data |
| Information on equality | training on equality and sharing information | sharing and spreading best practice | employers, SET community, researchers, policy makers | web based plus those directly trained and influenced |
| Information/enquiry service | range of enquiries received - anlaysed by type- available on request | to deliver a responsive services that meets the needs of the customer | women, employers, professional institutes, media, SET community, | 4346 enquiries |
| Publications catalogue | | | | 3,954 items |
| Policy | | | | No data |
| UKRC publications/publicity | | to market the UKRC services and raise the profile of the UKRC | women, employers, professional institutes, media, SET community, | 44 publications listed |
| PR and Coms team | team work on PR , marketing of comms of UKRC and services | raise the profile of UKRC and to market services | women, employers, policy makers, government, professional institutes, media, SET community, | 3 FTE working |

| Activity[49] | Outputs | Expected outcomes | Beneficiaries | Outcomes |
|---|---|---|---|---|
| Information on courses | thi is an aspect of the enquiry service and web based mapping of courses | to provide a central resource for information sharing, signposting, mapping | women, women in SET organisations and initiatives | Information on 59 courses |
| **4. To set up and maintain a database of expert women in SET** | | | | |
| | database extended to early, mid and advanced (expert) level women | provide a source of expert for the media, provide a source of women to engage as role models, network communities | women scientists engineers and technologists | 545 total registered - one third of these live entrants |
| | dormant database revived | provide a source of experts for the media | senior women scientists, engineers and technologists | 200 women experts in database. No requests from media |
| GetSet Women database | Women Signed up to database | provide a source of expert for the media, to engage as role models, to develop network communities, to provide a resource for UKRC | women scientists engineers and technologists | 1,237 registered women with 517 live |
| **5. UK gender statistics** | | | | |
| Statistics | data, interpretation, graphs, and enquiry service. Printed statistics digest under production | UK gender and SET disaggregated data | SET community, policy makers, government, employers and women | 76 statistics enquiries handled |
| **6. Raise profile of women in SET** | | | | |
| Photographic Exhibition: women of outstanding achievement | launch of an annual award - putting together judging panels, criteria etc, commissioning portraits, exhibition stands, annual launch event, negotiation for permanent homes for the portraits | to raise the profile of women in SET to provide inspiration to | women scientists engineers and technologists; public, SET community, government | 3 awards evenings - 6 awards per annum - 18 portraits. exhibition tours various venues |

| Activity[49] | Outputs | Expected outcomes | Beneficiaries | Outcomes |
|---|---|---|---|---|
| Discussion on representation of women scientists in TV drama | TV producers meets scientists at events; grants to scriptwriters | to raise awareness of producers to the issues for women in science; to get a script produced on TV | Script writers, producers, women scientists and engineers | 4events, 5 grants awarded; 500 participants |
| Media training | For high level women in SET, covering National TV, Radio and Print media | to raise confidence to speak to eh media | senior women scientists, engineers and technologists | 2 sessions |
| Women into Science and Engineering (WISE) Poster Campaign | A set of posters which aimed to dispel the stereotypical image of SET based careers | to promote role models and SET to young women | young women | 6 posters disseminated to 300 schools |
| Raising the profile of women in SET | Profile raising activities - GetSET database dev; relationship with Science media centre, media training events, BA festival | | | No data |
| Research | | | | No data |
| List of science pioneers | Profiles of pioneers available on website | to raise the visibility of women scientists and engineers in history | women, media, young women | 40 profiles |
| Collaboration with PAWS on script writing - see discussion on representation of women scientists in TV drama above | TV drama and film aimed at representing Women Scientists to the general public | | | No data |
| Events on profile raising | Two seminars at the Science and Innovation Conference in London | | | No data |
| **7. Pump prime innovation and disburse travel bursaries** | | | | |
| Projects for individuals and organisations | Provision of grants to organisations and initiatives | | Organisations; Individual women | 17 projects funded, 95 women received travel bursaries |

| Activity[49] | Outputs | Expected outcomes | Beneficiaries | Outcomes |
|---|---|---|---|---|
| **8. To support SET women returners** | | | | |
| T160 / T161 course with OU | On-line 10 week course facilitated by the Open University | 600 women to have completed the T160 course and progressed to SET outcomes, such as employment, further study or work placement | SET Women Returners with either a SET degree or equivalent degree level experience | 675 |
| Year in Industry | Women returners placed in paid or unpaid work placements with SET employers | 30 women placed in paid or unpaid work placements with SET employers | SET Women Returners | 12 |
| Womens Engineering Society | | | (see MentorSET below) | No data |
| Cardiff Womens Workshop | | | | No data |
| Equalitec | | | | No data |
| L'Oreal | Bursary scheme established with L'Oreal & UNESCO (L'Oreal UNESCO For Women in Science Fellowships) to promote and support young women researchers in the fields of life sciences | Bursaries awarded to enable young women researchers to establish themselves in their chosen field of life sciences | Young women researchers | 5 |
| Oxford Womens Training | | | | No data |
| Return Campaign | Information and support services to enable women to return to SET careers, further study or other SET related outcomes | 1000 women to have benefited from the range of RETURN services available, including the T160 course (see above), enhanced skills such as CV writing and interview techniques, access to work placements, mentoring support from a mentor or peer mentoring circle, | SET Women Returners | 1367 (this figure includes the T160 students also) |

| Activity[49] | Outputs | Expected outcomes | Beneficiaries | Outcomes |
|---|---|---|---|---|
| Positive outcomes | SET women returners achieving a positive outcome, including employment, further study, etc. | A range of SET related positive outcomes, including employment, further study or training, work placement and voluntary work | SET Women Returners | 413 (this figure includes women who have returned to non-SET employment) |
| Matching Service | Companies engaged with service | Job matches for women in SET | Employers/Employees | 11 companies/65 SET women registered |
| SET recruitment consultant at JobshareUK (funding for) | Online jobshare register, supported by a SET recruitment consultant | 1 consultant recruited | SET women returners registering with the job share register | As above - 65 set women registered |
| Mentoring for Public Life Programme | Pilot of a mentoring programme to match mentees with mentors who are members of public bodies, to enable the mentees to learn more about working on a public body and how to apply for positions,. | Mentees learn more about what public life involves and feel able to apply for positions on boards. | Women interested in learning more about what holding a position on a public board involves and how to apply for such positions. Participants were drawn from the GetSET database | 23 mentees, matched with 23 mentors drawn from non-departmental government bodies |
| Peer mentoring | Establishment of peer mentoring relationships and circles | Returners feel supported and able to progress their return to SET action plans. | Women returners | 122 women returners (39 one on one mentees and 83 women in Peer Mentoring Circles) |
| MentorSET | Set up of mentoring pairs and provide on-going support and mentoring training for these pairs | 57 pairs or 114 individual beneficiaries | Women working and studying in SET, as well as SET women returners | 196 individual beneficiaries |
| Mentoring projects with employers | Establishment of mentoring programmes for women, either through employers or professional organisations | 12 schemes established with employers or professional organisations | Women working in SET | 22 projects established (plus 132 beneficiaries from professional orgs and |

| Activity[49] | Outputs | Expected outcomes | Beneficiaries | Outcomes |
|---|---|---|---|---|
| | | | | 203 beneficiaries from employer based schemes) |
| Mentoring resources on website | Online mentoring module | Online mentoring module for mentees and mentors who are not able to attend mentoring training sessions due to geography, time, etc. | Women working and studying in SET, as well as SET women returners | |
| Programme of training and development activities for women at all career stages | | | | No data |
| working with government in their aim to have 40% female representation on SET public bodies | | | | No data |
| Travel Bursaries | Raise £10K to support travel bursuries | | SET women | 95 |
| **9. to co-ordinate the work of women in SET organisations** | | | | |
| Direct funding of initiatives | | | | No data |
| Meetings and events | | | | No data |
| Training provision | | | | |
| Representation on NAG | | | | |

As noted above, UKRC resource expenditure is not evenly distributed but is concentrated in some key activities. Since the Centre's launch in 2004, just over £5.1 million of 'core' funding from DTI/DIUS has been spent on the nine 'key tasks', according to UKRC data, together with an additional £250,000 of 'third party' funds (Figure 11).

**Figure 11: UKRC expenditure**
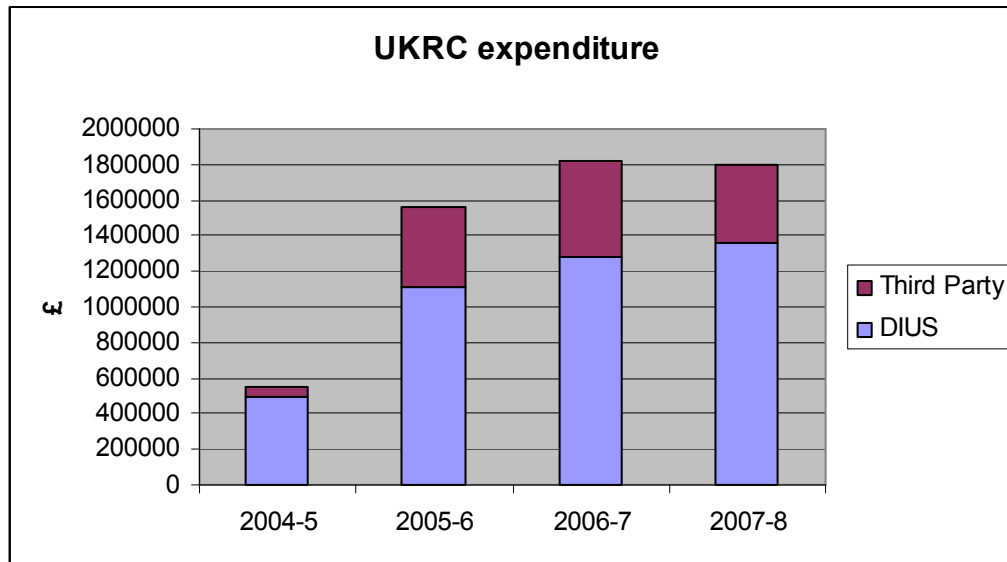


*Source: UKRC budget figures*

As .

Figure 12 shows, the largest element of expenditure are the overhead costs of running the Centre. These have increased from £235,000 a year between 2004-05 to over £300,000 in 2007-08, although this represents a decrease of £50,000 on the previous year. 'Support' costs amount to over £560,000 over the period 2004-08. This includes costs for the Finance Team, the Enterprise Support Unit, the Business Development Manager, other central support staff as well as the UKRC Director, Acting Director and the director's PA. Without the Director roles, support costs amount to £362,249 for the period 2004-2007. .

Figure 12 shows the break-down of expenditure by type of activity, with the Director roles included in the 'support costs' heading.

**Figure 12: Expenditure by activity**

**Expenditure by activity**
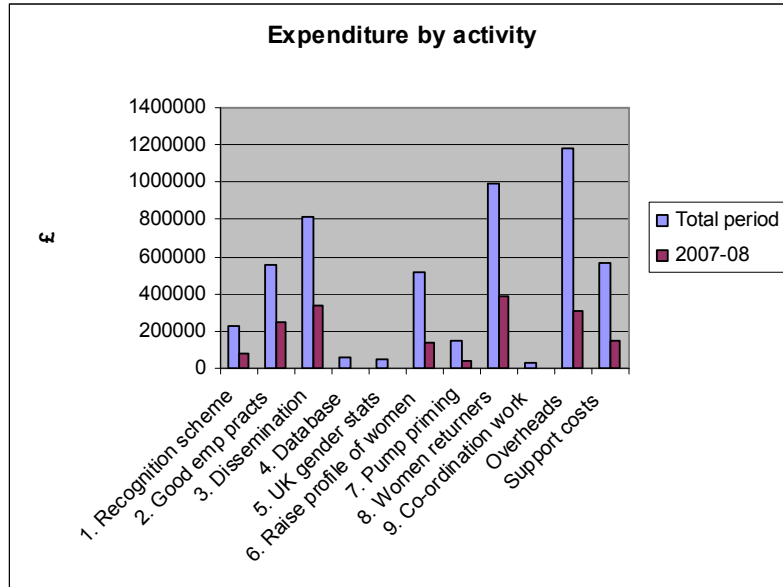
*Source: Budget figures provided by UKRC*

Over a third of UKRC's resources are thus allocated to the organisational costs of running the 'hub and spoke' system. If the director roles are taken out of this calculation, overhead costs are just under a third of UKRC costs. Without comparable benchmarks it is difficult to take a view on whether this constitutes a 'reasonable' balance between 'administration' and 'delivery' (although it is perhaps worth noting that the US Association for Women in Science spends 85% of its revenue on its 'programme' activities and 15% on administration).

As .

Figure 12 above shows, the largest concentrations of UKRC investment in resources that are not related to running the UKRC infrastructure have been in the women returners activities (19%), Dissemination work (16%); and sharing good employment practice (11%).[50] By relating these trends to our assessment of UKRC outputs and

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[50] These figures do not take into account that the directors also contribute to these activities even though salary costs associated with these roles are included in the support cost heading.

outcomes, as summarised in Section 4 and Table 7-2 above, some broad observations on potential value can begin to be drawn. As noted above, the area where UKRC work appears from the evidence to be producing the most significant benefits is Supporting SET women returners. Many of the activities in this strand of work appear to have exceeded planned targets and delivered positive outcomes for a significant number of stakeholders, for example the Returners campaign (benefiting over 1,300 women,) the returners' courses (675 participants), the Positive Outcomes initiative (exceeding its target of 300 by 47 participants), and the MentorSet programme (almost doubling its target of 100 participants). These results tend to support the view that this element of UKRC's work is delivering effective, 'value for money' returns.

The picture is less convincing in the other 'high spending' work strands. In strand 2 (sharing good employment practice), work on implementing the 'Kite Mark', together with the Manufacturing Excellence (MX) Awards and UKRC Award for Diversity and Inclusion has incurred around £100,000 of the Centre's resources, with a relatively modest return of 28 awards made. Dissemination activities account for over £800,000 of expenditure since the Centre's launch. However, evidence of the utilisation patterns and the value added associated with outputs and services like the 'Progress' Newsletter and 'Spark' magazine, as well as on-line services such as the information enquiry service and the publications and documents repository is unconvincing, as is the evidence on outcomes associated with the £450,000 devoted to publications, publicity and PR. Similarly, profile raising activities have accounted for over half a million pounds of the resources expended by the Centre since its inception. However, the impacts, and the value added of initiatives like the GetSET database development the costs of which cannot easily be specified[51], collaboration with the Science media centre and media training events and the £80,000 spent on a discussion on the representation of women in TV drama, and on the scriptwriting initiative, remain open to question.

## 7.6. Views on the impact of UKRC activities

This section undertakes to look beyond the outputs and outcomes that UKRC has achieved through its work between 2003 to 2007 to explore what the impact of its activities has been. The unit of analysis will be the individual beneficiary (be this a woman returner, an employer or other organisation). In addition, pulling together the assessment of the stakeholders interviewed we will look beyond the individual in an attempt to draw conclusions about the wider impact of UKRC's work. The assessment of impact relies on self-reported impact on the one hand which is then triangulated with the views of stakeholders that were not direct beneficiaries of these activities.

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[51] The development of the database formed part of a contract with Sheffield HallamUniversity of £374,538 which also included the following activities: setting up and managing Information Service, Setting up a bibliographic database, mapping of initiatives, GetSET database, public bodies activity to change culture and recruitment practice, media training, website strategy, contribtion to core partner functions and UKRC strategy.

### 7.6.1. Increasing participation of women in SET careers

What emerges from the data on impact that we have collected as part of this evaluation is a split picture. There is clear evidence, both from women participants and UKRC's wider stakeholder community, that activities have had an impact on individual women. However, it is proving at present difficult if not impossible to come to any conclusive statement as to the impact of the organisation's activities on the participation of women in SET careers more generally. One set of interviewees expressed this as follows: "At a microscopic scale, that is at the level of the individuals, it [UKRC] does have an extraordinary impact, but (we're) not sure how much impact this adds up to when you put all the individuals together" [S17].

**Impact at the individual level**

What, then, has been the impact of UKRC activities at the level of the individual participant? As part of this evaluation work we carried out interviews with 21 women beneficiaries and carried out a survey of those women who had participated in UKRC activities.[52] In our interviews and survey, we asked women about the impact of their involvement with UKRC activities on three areas: their career, professional development, personal development and work-life balance.[53]

As Figure 13: Impact of UKRC activities on women participants below shows, about a third of women report UKRC activities having had 'a lot' or 'a great deal' of impact on their professional or career development. In addition, just under 40 per cent of respondents report that their participation in UKRC activities has had 'some' impact on their professional and career development (37.5 per cent and 39.4 per cent respectively). At the same time, almost one fifth of respondents felt that there had been no impact at all on their professional development or career development from their participation in UKRC activities. Interestingly, almost half of survey respondents (46 per cent) reported that UKRC activities had had 'a lot' of or a 'great deal' of impact on their personal development.

**Figure 13: Impact of UKRC activities on women participants**

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[52] The survey was sent to around 1000 participants and completed by 160.
[53] Understandably, answers showed a significant overlap in these three areas.

**How would you measure the impact UKRC has had on your life in terms of:**
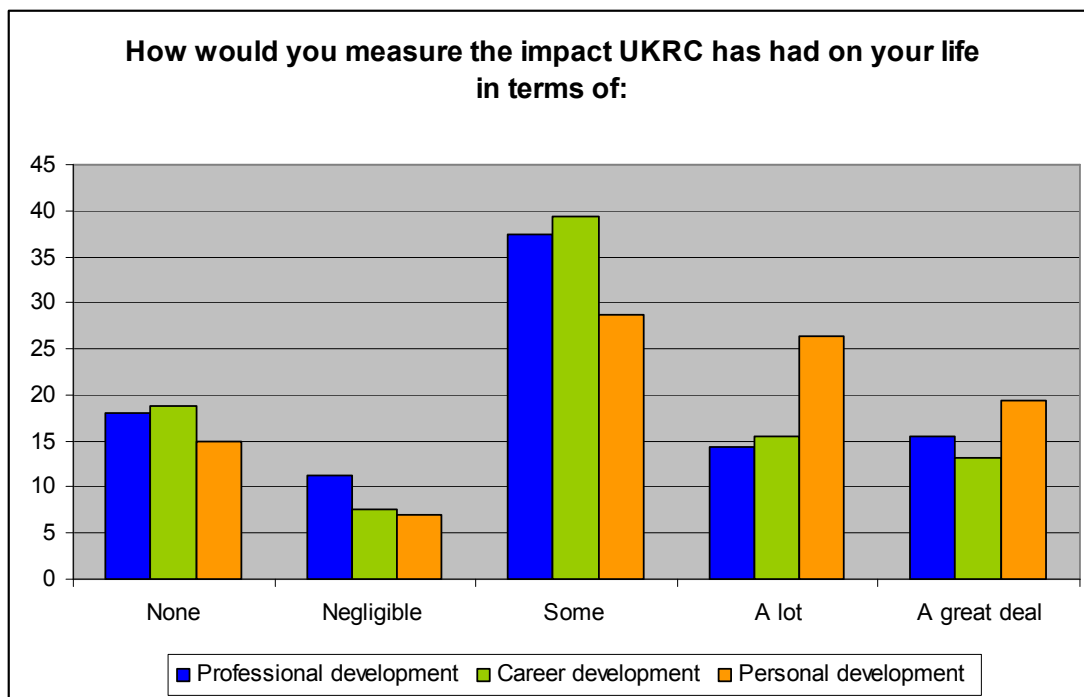


*Source: Participants' survey*

The qualitative information provided by women participants through the survey and the telephone interviews provides more granularity of some of the self-reported impacts in these three areas.

Table 7-3 below provides an overview of the areas in which women reported main outcomes and impacts:

Table 7-3: Main self-reported outcomes and impacts of UKRC services on participants

| Q14.  What do you consider have been the main outcomes and impacts of UKRC services for you? | % |
|---|---|
| 1) Improvements in self confidence | 54% |
| 2) Development of professional skills | 31% |
| 3) Improved networking | 26% |
| 4) Improved preparation for employment (CV/ interview skills) | 18% |
| 5) Identification or development of career focus | 16% |
| 6) Access to peer and/or mentoring support | 13% |
| 7) Support to access professional development opportunities (training, conferences and further education) | 13% |
| 8) Access to employment (including work placements) | 10% |

Looking at these in more detail under the broad headings of career development, professional development and personal development provides further detail on these items.  Additional comments made by women in response to the survey are included in Annex 2: Comments on UKRC by Participants.

**Impact on women's careers**.   Women participants reported an impact in a number of areas:

- **Finding work**. The women who participated in telephone interviews frequently mentioned the opportunity to gain or enhance their skills in relation

to work getting (ie CV writing, presentation skills, networking skills) through a range of UKRC activities.  These areas were also mentioned by survey respondents. 26 per cent of respondents, for instance, mentioned access to networking opportunities (e.g. through T160 conferences, mentoring circles and events that UKRC had supported them to attend or provided them with information about).  This was seen to have impacted on women's self confidence, and identification of collaboration and job opportunities: *"networking with other women helped my confidence"* [WS 9].  Further, 18 per cent of survey respondents mentioned a key outcome to be enhanced preparation when applying for employment.  This primarily related to activities which supported individuals to develop and improve their curriculum vitae and interview skills.  In at least one case a respondent's access to employment was directly attributed to support UKRC provided with their CV, while others identified UKRC's role in improving their career prospects.   *"I've possibly ended up in a better job than if I'd done the application process unsupported"* [WS 181].  *"I learnt to sell myself better via my CV"* [WS 37].  *"[It] helped hone my CV so I am now getting interviews"* [WS 183].  *"[I] have had some interviews recently as result of a more professional CV"* [WS 203].

- **Updating skills**. In addition to these generic skills, opportunities to update sector specific skills and knowledge were also highlighted by many respondents in the telephone interviews. Finally, 10 per cent of survey respondents specifically attributed their involvement with UKRC to their access to new employment opportunities both in the form of placements and in some cases full time employment.  *"I went back to work through the placement which would not have happened if I was not involved with UKRC"* [WS 148].  *"[UKRC helped] breaking the barrier, by providing opportunities to prove myself through* [a] *job placement* [which led to] *gaining full employment"* [WS 50].  These views were echoed by two of the respondents interviewed as part of the telephone survey.

- **Enhanced career focus**. As an additional impact both the telephone interviews and the survey surfaced an enhanced degree of career focus and an ability to feel clear about what they wanted.  16% of survey respondents noted that their involvement with UKRC had contributed to them developing an enhanced focus to their career planning within SET.  This was presented in a number of ways including help with decision making about their career, renewing their resolve to return to a SET career, or support to access further education and training: *"[UKRC] Helped me to regain my desire for a career in SET and to take first steps towards my goals"* [WS 12]. *"I found the T160 course a fantastic way for me to step back and think about where I want to go, it increased my confidence and made me realise that I would like a job which uses my science skills"* [WS 39] *"Now I have a clear idea on which direction to go"* (WS 26).  *"[UKRC] encouraged me to pursue advanced education"* [WS 46].  One telephone interviewee noted a reduction in the "pressure to go out and get any job" which had allowed her to concentrate here efforts on a career in SET.

The second area of impact is on **professional development.**  Here, women have reported the following types of impact:

- **Developing professional skills.** 31% of survey respondents attributed UKRC with developing their professional skills (this figure excluded those skills specifically relating to job preparation e.g.  interview skills which are dealt with separately below). Specific skills which individuals felt UKRC helped to develop included: management, planning, leadership, networking,

mentoring, and other unspecified transferable professional skills. Opportunities to 'upskill' and add to their existing skills base were welcomed. However more opportunities for 'upskilling' were also requested, particularly in relation to IT where women felt this was a key barrier to accessing employment: *"I have been out of work for 3 years ... if I could upgrade my technical skills, I could face employers, but I know they would not even consider me"* [WS 182].

- **Support to access professional development opportunities.** 20 per cent of participants identified that UKRC had resulted in them accessing additional professional development opportunities through training, further education, conferences and events. Access to bursaries and funding opportunities which had enabled individuals to attend events and conferences relating to their area of work were mentioned by several respondents. In particular opportunities to attend and present at conferences were seen by several women as particularly significant and a key catalyst in facilitating networking, access to opportunities for further education, development of self confidence and access to employment: *"Attending the international conference when I did was critical at the stage of my returning to a career in science. There were no other sources of funding I could have applied for… it was vital for building my confidence and current knowledge"* [WS 85]. *"The travel grant enabled me to go and present a paper for the first time. This gave me added confidence and exposure"* [WS 75]. *"I had the opportunity to present my work to the scientific community... and to create new collaborations. All this had a substantial impact on the long term"* [WS 76]

- **Access to peer and/or mentoring support.** 13 per cent of survey respondents mentioned an outcome of their involvement with UKRC to be increased access to support, primarily in the form of peer support but also through mentors. The impacts of this support was noted to range from increases in confidence, a reduction to feelings of isolation, increased motivation and an insight into additional opportunities in SET training and employment. Opportunities to meet other people in similar situations were highly valued. They provided women with opportunities to *"learn from others experiences"*, *"hear tips"* and were noted as sources of inspiration and encouragement. One respondent also highlighted the role of peer mentoring circles in helping to maintain her sense of professional identity in relation to job markets: *"the peer mentoring circles have been critical in maintaining a view of myself as a scientist seeking employment at a suitable level"* [WS 119]. One to one mentoring was also singled out by a number of respondents as a key source of support. *"I was supported by my mentor through an application for chartership – I probably wouldn't have got the form in without her"* [WS 54]. *"My mentor has undoubtedly given me important insight into career progression. Her views have been invaluable to me"* [WS 160].

Mirroring survey results, for many women interviewed **personal development**, though directly linked to accessing employment opportunities, was the area where they had gained the most. The transferability of many of the skills they attributed to UKRC activities was recognised and commented upon. A number of women noted that many of these skills had been useful in other areas of their life or employment which did not relate directly to SET. The link to employment was also made by respondents to the survey. Improvement in self-confidence was the impact most frequently mentioned: the majority of telephone interviewees and 54 per cent of survey respondents mentioned this as an impact. In the majority of circumstances this was identified as an impact in relation to their personal development but in some

cases was also described as an impact in relation to professional development, career development and access to employment by some respondents. The development of participants' self confidence was attributed to a range of different UKRC activities including interview skills work, participation on T160, mentoring, networking opportunities, one to one support, financial support to enable attendance at conferences events and peer support and identification with others in similar positions: *"[UKRC] definitely increased my confidence in my ability"* [WS 26]. *"The T160 course helped me to increase in confidence and return to work"* [WS 30]. *"It increased my self esteem during a time of change… very helpful"* [WS 151]. In a number of cases participants also specifically linked the development of their confidence to their career development and/or ability to access employment. Conversely, many of those who mentioned that UKRC had contributed to the development of their confidence related this solely to personal development and could not identify any ways in which this had impacted on their career or professional development.

Finally**,** attitudes toward the impact of UKRC **on work-life balance** expressed by telephone interviewees varied considerably depending on the situation off those interviewed. For a number of respondents this was felt to be an area which they had achieved balance and resolution independently of UKRC either due to age or other factors. For others, however, UKRC activities were noted to have improved their understanding of this issue and their confidence in defining and expressing their choices about work-life balance. Communicating with employers about this issue was a skill that many felt they had developed or improved as a result of UKRC activities.

Some of the UKRC stakeholders interviewed for this evaluation corroborated these views from their perspective. Individuals who had been involved with the mentoring programme reported that this had had a direct positive impact on participants [S9, S2, S13]. One interviewee, for instance, reported that providing mentoring support to young women had meant that 12 of those mentees had decided to stay in research [S9]. Others felt that the returner programme had had an impact. "They have had an impact through their women returners scheme – difficult to quantify, but they have undoubtedly got some women back into STEM careers" [S16] and that the number of women in contact with UKRC who had returned to the workforce provided proof of impact [S10, S4]. Interestingly, one interviewee referred to the importance of the indirect impact of UKRC activities with returners: "Campaigning for women returners in itself has a knock-on effect for those women already in work as it raises the issue of working conditions for women in STEM" [S16]. At the same time, however, one theme that emerges from these interviews is that is was difficult to quantify this change.

### Global impact

Going beyond the individual level, some respondents felt that keeping the issue of women in SET on the agenda [S23], raising the visibility of women in SET and being known and providing advice [S14] has an impact.

For a number of interviewees, however, assessing impact beyond the individual level, however, proved difficult or impossible.  One interviewee felt that changes in the SET landscape had been so small that, with so many small initiatives present, it was difficult to attribute change to the activities of one organisation (UKRC) [S2].

Overall, however, the importance of time emerges as a key theme in these replies.  Some interviewees simply felt it was too early to make an assessment of UKRC's work with women returners, or they could not comment at this point in time [S24, S4, S24, S7, S25].  One interviewee explained: "This is a very long-term change process and the rate of change in the UK is extremely slow, regardless of the efforts of many different organisations, so given that UKRC has only been working in this field since 2005 I don't think that you can expect them to have had a quantifiable impact, that is you would find it hard to put together an evidence base to say that have impacted on the participation of women in STEM careers, other than possibly through looking at the figures of success with individuals in terms of supporting women returners and the mentoring work they have funded"  [S4].

This was also the tenor of replies from the employers we interviewed as part of this study.[54]  They were unable to state that their engagement with UKRC had had an impact on the number of women in their workforce.  Our interviewees felt that it was either too early in their engagement with UKRC for them to be able to make this claim [S26], or that, whilst the number of women had been increasing, this was due to other factors than their engagement with UKRC [S27].

## 7.6.2. Promoting culture change amongst employers

In order to assess the impact of UKRC activities changing cultures within SET employers we spoke to some employers directly and also asked each stakeholder about their views on UKRC's impact on culture change.  The pattern that emerges from these conversations resembles those identified for women returners.  It is clear that at individual employer level, engagement with UKRC has made a difference - - though this is not yet necessarily translated into the recruitment of a large number of women into the workforce.  Looking beyond the individual employer level, stakeholders are able to report success of individual tools but tend to stress the difficulty of measuring impact at the moment.  Overall, it certainly is the case that, other than along very broad thematic lines, there is little overlap in the answers stakeholders have given.  It seems that each interviewee spoke from a particular perspective and knowledge base so that it is perhaps in the amalgamation of the views of individuals that we are able to arrive at a picture that is approximating completeness.

**The view of employers**

Though employers were unable to state that engagement with UKRC had made a difference to the number of women in their workforce, they did report the engagement having had a positive impact on their culture.

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54 It is important to stress, however, that this sample consisted of 6 organisations.

Two of the employers we spoke to reported that as a result of engagement with UKRC they had gained a much better understanding of how to manage issues around women returners. For one company, this expressed itself in a user-friendly maternity pack for women leaving which reduces anxieties amongst female staff and has raised awareness amongst managers around the issues these women might be facing [S19]. Another company gained an understanding of how it needed to modify its induction and women returners in general.

Another set of themes that emerges is an increased awareness around issues of diversity, this might be either understanding the business case for it [S27] or understanding better areas where the business is doing well and those where it is doing less well [S19] or asking fundamental questions about it ("Is the organisation diverse?") [S28]. In the words of one interviewee: "The diversity and inclusion award really made the organisation look at itself – was it diverse? The process of applying and work within [the company] to see if we were up to scratch between men, women, HR and management offered learning. (…) The award has prompted [the company] to look at women's needs. We are undertaking a survey of (…) employees to understand what these are and hope to build on / canvas ambition, support women and provide mentors through UKRC" [S28].

Two interviewees also reported that their CEO had taken on the issue of diversity which had made a real difference to the organisation. It was not reported whether the CEO's interest had come about as a direct result of the organisation's engagement with UKRC.

**The wider perspective**

In the assessment of the wider stakeholder community, we can detect a carefully phrased positive assessment of UKRC's impact on changing cultures with SET employers, with some stakeholders being more unreservedly positive than others.

Commenting on UKRC's work on culture change generally, one stakeholder felt that UKRC was setting up a sound generic framework for culture change [S24] and another felt that "UKRC's impact here can and is enormous in that it challenges traditional views among employers" [S31]. A number of interviewees mentioned individual products that they felt had had an impact (Athena Swan, the Kite Mark) had had an impact [S9, S23, S10] – though they did not expand to explain how other than organisations participating.

A more carefully phrased assessment of impact can be found in the case of a number of other stakeholders. A number of interviewees perceive a climate change among UK employers but find it difficult to assess how far and directly this is due to the work of UKRC [S16, S3, S32]. One of these interviewees expressed this as follows: "There is now a very clear climate change, but again it's difficult to measure impact, however UKRC's work will certainly have provided the leverage to change things in some organisations. For many employers they will have provided a source of information re best practice and will have stimulated consideration of the working environment and how it either supports or prohibits women's advancement" [S16].

Disagreeing with this assessment, one interviewee felt that "It is too early to tell if there is a culture change, (we) need to wait 6-7 years" [S29].

Finally, one stakeholder referred to the general difficulties with doing this work: it is dependent on the willingness of the organisations themselves to engage with this process which can be difficult: "you have to have the right organisation at the right time and the right tools to help them" [S17]. It is perhaps these difficulties that explain the perception of another stakeholder:

"I think it has only been in the last year at best that they have really begun to work with employers, so they were a bit slow off the mark with this, but they do now understand the need to change organisations' cultures and raise awareness amongst employers of gender issues. Also they have much more of a realisation that you scan effect a lot more change overall amongst employers if you change the environment in which the organisations operate, because ultimately employers have their own agendas and priorities, so what you need is for the environment they work in to be demanding change of them with regard to their approach to women in STEM occupations" [S7].

### 7.6.3. Bringing together women in SET organisations

A number of stakeholders reported that UKRC has had an impact on bringing together women in SET organisations. One stakeholder argued that "it is playing a pivotal role" [S24], another told us that "UKRC is (or can be) very powerful and useful in that it represents a single voice on gender issues around STEM education and occupations" [S29]. From the responses stakeholders were providing, the events (conferences and other events) emerge as the key lever for UKRC to bring women in SET organisations together. One stakeholder, for instance argued: "They have had an impact, just through organising conferences and bringing women together that have an interest in the women in STEM agenda. They have definitely provided networking forums through their events" [S3]. One stakeholder was able to put a historic perspective on this issue:

"I think that UKRC now understands that partnership is the only thing that will work, initially they trod on toes of other organisations and replicated some areas of work, but I think have now managed to forge strong collaborative working relations with may of the women in STEM organisations – however you can never be liked by all the people all the time! When they first came in to existence they were keen to establish themselves and meet the funders' expectations, to the extent that they did forget the requirements and positions of the smaller organisations, but through talking most of the early poor partnerships have been addressed"[S7].

However, another set of stakeholders was more sceptical about UKRC's impact on bringing women in SET organisations together. One argued, for instance, that whilst events and conferences are forum for networking and women in STEM organisations coming together, "really overall it is very difficult to talk about impact – (it's) just too early to make a real judgement about how UKRC have impacted as it takes time for outputs to be seen" [S17]. Another stakeholder argued that whilst they had seen women in SET organisations at meetings it was difficult to see whether this was

because UKRC had reached out or because "they are there because the UKRC are holding the purse strings" [S30]. Two others felt that UKRC's impact in this area had been small as it had not done much, or what it had done was small scale so that UKRC was not operating as an umbrella organisation at the moment [S2, S16]. One of these interviewees, however, qualified her statement by saying: "(This is ) not a criticism of them per se, as I don't think that they have got the resources or the necessary government backing for this. They would need very high level government driver to support hem if they were to take on this role" [S2].

Looking ahead, one member of the wider UKRC system said: "UKRC is extraordinarily connected (implementation, policy, research, RDAs). The job is to put this accolade to work for the benefits of women in STEM" [S10].


## 7.7. Conclusions

- The spectrum of activities covered by UKRC's work, involving nine core task 'clusters' and over 60 activities, is wide, diverse and complex. In carrying out this work programme, UKRC has produced an extensive and diverse range of products and services, targeting a wide spectrum of important stakeholders in the women in SET landscape. In broad terms, the distribution of activities is consistent with UKRC's remit and 'holistic model for change'.

- The areas where the evidence suggests that UKRC's work is likely to make a significant contribution to policy and practice objectives for women in SET include: recognising and rewarding good employers (through for example the Athena Swan Charter); disseminating and sharing information – particularly the Centre's online content repository, which provides an extensive and valuable resource base for users and a platform for collaborative knowledge creation and knowledge sharing; collation and dissemination of UK gender statistics; pump priming innovation and disbursement of travel bursaries; supporting SET women returners - a key element of UKRC's remit and holistic model for change that has consistently achieved or exceeded its targets, particularly with the Returners campaign; the returners' course, the Positive Outcomes initiative and the MentorSet programme.

- Some target groups and 'scenarios of action' remain relatively under-represented in the current spectrum of UKRC activities, notably 'hard to reach' groups, such as women from black and ethnic minority communities, women with lower educational qualifications and women in lower paid or less well qualified occupations; grass roots and community-based networks, and the policy-making constituency.

- There are some areas where questions could be raised about the value of particular activities. For example, of the 19 activities for which a specific target has been specified by UKRC, 6 activities failed to reach that target. These, and other activities where outcomes and impacts appear to be contributing less than might be expected, include: Kite Marks; the Manufacturing Excellence (MX) Awards and UKRC Award for Diversity and Inclusion; the 'GetSet Women' database; the 'Year in Industry' initiative; the UKRC 'Peer Mentoring Circle' initiative. The Champions for flexibility, though no targets were set, attracted only two entries.

- There are some areas where the relevance and value added of activities is not clear. These include: the Culture Analysis tool; some Dissemination activities – notably the 'Progress' Newsletter and 'Spark' magazine, as well as on-line services such as the information enquiry service and the publications and documents repository – policy engagement work; Publicity and Public Relations; 'Raising the profile of women in SET' – particularly the annual 'Photographic Exhibition'; media discourses and media training; poster campaigns – the GetSet Women database; Co-ordination work with women in SET organisations.

- There is little evidence that UKRC is developing and implementing an 'organisational learning culture' involving mechanisms for feedback from stakeholders, and building in space and opportunity for reflection on how its strategies and activities are working.  In addition, the evidence from interviews seems to suggest that opportunities for external communication of services, outcomes and impacts are not sufficiently sought.

- Since the Centre's launch in 2004, just over £5.1 million of 'core' funding from DTI/DIUS has been spent on the nine 'key tasks', according to UKRC data, together with an additional £250,000 of 'third party' funds. About a third of this covers 'administrative' costs (running the UKRC infrastructure). Although there are few benchmarks to make comparisons, UKRC may wish to review whether the balance between 'administrative' and 'programme' expenditure is a reasonable one.

- The largest concentrations of UKRC investment in resources that are not related to running the UKRC infrastructure have been in the women returners activities, dissemination work and sharing good employment practices. The assessment of the 'women returners' outputs and associated outcomes tends to support the view that this element of UKRC's work is delivering effective, 'value for money' returns.

- The picture is less convincing in the other 'high spending' work strands, and UKRC may therefore wish to review in more detail the value, outcomes and effectiveness of activities like the 'Progress' Newsletter and 'Spark' magazine; the information enquiry service and the publications and documents repository;  UKRC's publicity and PR strategy; the GetSET database and media and media training events.

# 8. THE CASE STUDIES

## 8.1. Scope and purpose of the case studies

The Case Study analysis forms part of work package 3 of the evaluation (Summative Review). This set of activities focuses on 'effects', with a specific emphasis on assessing the extent to which and in what ways the Centre is achieving its key goal of promoting greater engagement of women in STEM occupations. The case studies are aimed at deepening further the understanding of 'what works, for whom under what conditions'. They focused on exploring in depth the issues raised by the Activities audit; surveys and interviews. Two 'thematic' case studies were undertaken, covering two 'service scenarios' provided by the Centre: firstly, promotional initiatives and, secondly, pump-priming and research initiatives. The two thematic case studies cover a wide and eclectic spectrum of UKRC work, and hence comprise a number of 'units of analysis'. Table 8-1:UKRC work covered in case studies summarises the range of possible elements and activities to be included, and provides examples of each.

**Table 8-1:UKRC work covered in case studies**

| Promotional work | | |
|---|---|---|
| Element | Sub-activities | Examples |
| Raising the profile of women in SET | Web-based information systems and services | WiTEC UK Database of Women Experts in SET GetSet database Case studies and weblogs |
| | Public bodies | Advertising vacancies in government departments |
| | Raising the Profile Events | PAWS (Public Awareness of Science) Drama Fund Cheltenham Festival Royal Society Seminar |
| | Other profile raising | Collaboration with Science Week Nominating women for awards |
| Marketing and communication | Conferences | UKRC Annual Conference |
| | Exhibitions | SET Photographic Exhibition |
| | Dissemination | Newsletter 'Progress' Posters Educational material Publications |
| Research and pump-priming | | |
| Element | Sub-activities | Examples |
| Research | UKRC research | UKRC/EPCglobal Engineering Survey |

| | UKRC/JIVE and ESF EQUAL Research projects | Yorkshire and Humber survey of doctorate students in SET Cultures of private and public SET boardrooms - Cranfield University |
|---|---|---|
| | Dissemination of research | Virtual Research Unit (VRU) Website |
| Pump-priming | Ad-hoc pump-priming | Cambridge AWISE networking and mentoring scheme |

## 8.2. Evaluation questions and criteria

The case studies address the three over-arching questions of the evaluation as a whole, i.e.:

- How does UKRC's promotional and research work fit into the mission and objectives of UKRC, and what contribution do they make to UKRC's position in the STEM landscape?

- Are they 'fit for purpose' in terms of implementation and management processes?

- What are the main outcomes and impacts for key stakeholders?

The key evaluation criteria to be applied in the case studies are as follows:

- relevance – to the mission and objectives of UKRC and broader STEM policy agendas

- efficiency – of the implementation processes used

- appropriateness – for example of the selection processes for pump-priming awards

- effectiveness – for example the effectiveness of UKRC Conferences in raising awareness of women in STEM issues

- value added – the contribution made to UKRC's overall mission and objectives of an activity set against its costs

This part of the evaluation therefore covers four areas, which are reported below:

- What kind of activities being carried out and for what purposes?

- How are these activities carried out?

- What are the main outcomes and impacts?

- What conclusions can be drawn for the future development of the Centre?

## 8.3. Methodological approach

The approach incorporates a multi-methodological model, triangulating data drawn from both primary sources (e.g. interviews with key stakeholders) and secondary sources (e.g. annual reviews; monitoring reports). Each case study entailed the use of a synthesis 'template' to support standardisation of data and analysis. Table 8-2 sets out the data collection methods for each element of the two case studies.

The methodology allows for the collection and analysis of data that is derived from other activities already being carried out in the evaluation, i.e.:

- Website usability instrument
- Website utilisation statistics
- Activities analysis instrument
- Stakeholder and staff interviews
- Web survey
- Participants survey

Two additional evaluation tools were also produced:

- Case study interview topic guide
- Observation checklist

Table 8-2: Evaluation methods

| Thematic Case | Evaluation questions | Evaluation criteria | Evaluation methods |
|---|---|---|---|
| Promotional activities | Who is using the services and for what purposes? How efficient is the service? What are the main outcomes for users? How relevant is this activity? How many and what type of participants have taken part? What impact has this had? | Utilisation rates and patterns Usability and user-friendliness User effectiveness Relevance Number of vacancies placed Number and profile of events Number and profile of participants Cost effectiveness Stakeholder impact | Website statistics Results from web and participation surveys Results of interview questions with stakeholders and UKRC staff Interview with UKRC staff Secondary data from UKRC staff and Annual Reports Citation analysis |
| UKRC research | How relevant is this activity? How well is it managed? What impact has this had? Did it displace funding from other UKRC core activities? | Relevance Participation rates Dissemination of results Transparency of selection and award process Efficiency of monitoring and evaluation Dissemination of results Cost effectiveness Displacement Additionality | Secondary data from UKRC staff and Annual Reports Citation analysis results Interview with UKRC staff Interviews with award holders |

# 8.4. Research and pump-priming[55]

## 8.4.1. Background: what is being done and why

As with many aspects of UKRC's work, the picture on research and pump-priming appears complex, and at times confusing. 'Research' can be seen to some extent as a 'transversal' activity that cuts across several of the areas that constitute the Centre's 'holistic model' for change. For example, part of its remit is to publicise and disseminate the results of research on women in STEM that is taking place in the UK and further afield through, inter alia, its Virtual Research Unit (VRU) website (although this does not yet appear to be up and running). In turn, UKRC is involved either directly or indirectly in projects that are undertaken by its delivery partners. These currently include the following:

- Long term impact of Positive Action training - Open University Follow up study carried out in 2006 with women IT technicians and plumbers who had taken part in positive action training in Wales and Oxford.

- Evaluation of T160 course and its impact - Open University evaluation of the teaching and learning experiences of the Open University short online course "T160 A course for women returners to SET"

- Online networking and women's careers in SET - Open University project to investigate and develop understandings of online networking and how it influences women's career and professional development in SET careers.

- Cross cultural comparison of women in SET in East/West Europe - Open University, and UKRC study to examine how women's identities and careers as scientists, engineers or technologists, are affected by the changing political and social frameworks in which they live and work, using contrasting case studies from Latvia, Poland and the UK.

- Built Environment Higher Education - the Learning Experience of Women Students - Sheffield Hallam University project to discover the lived experiences of gender for female students in the built environment department at a new university and through this to understand how a traditionally segregated area of academic study might be changed to become a more conducive learning environment for women.

- Women in the Construction Industry - Contrasting Cultures and Motivators for Women - a European Study - Sheffield Hallam University project to gather examples of groups of women working proactively in construction across Europe to draw out the influences and drivers that lead to success in a very male dominated industry.

UKRC also commissions research that is funded partially or wholly from the grant received by DIUS, or through a combination of 'core' grant and co-funded revenue received through the 'EQUAL' Programme. These include the following:

- Women in science, engineering and technology - national and regional activity – the Small Enterprise Research Unit at Newcastle University, is leading a project that will map out current initiatives focusing on women in SET.

- Yorkshire and Humber survey of doctorate students in SET. Undertaken by UKRC staff, the study investigated differences and similarities in career aspirations, attitudes to enterprise, and experiences/opinions regarding setting up a business, among women and men studying towards a doctorate in the male-dominated SET disciplines.

- Presence and representation of women scientists, engineers and technologists in the UK media – a study by the Cardiff School of Journalism, Media and Cultural Studies is analysing how TV, film and newspapers portray women scientists, engineers and technologists and whether the media impacts on the under-recruitment of and failure to retain women in SET.

- Gender cultures in SET boardrooms: implications for women - this research project explores the cultures of private and public boardrooms in SET companies and organisations and the barriers to women's progression. The research is being led by Dr Val Singh, Deputy Director of the International Centre for Women Leaders at Cranfield School of Management.

- Researching cultures in science, engineering and technology: an analysis of current and past literature - a study by Loughborough University, led by Professor Barbara Bagilhole, is exploring the existing literature on cultures in science, engineering and technology from a gendered perspective.

- Invisible witnesses? Investigating gendered representations of scientists, technologists, engineers and mathematicians on UK television - this research project, led by members of the Open University's Centre for Research in Education and Educational Technology, looks at how frequently images are

shown, how scientists, technologists, engineers and mathematicians are represented within these images and explores how children and young people interpret and contextualise such images on UK television.

- Women in science, engineering and technology: three decades of UK initiatives – a project by the University of Sussex which charts the recent history of initiatives to encourage girls and women into SET.

- Production of a European database of research literature about women in SET – a UKRC project to develop an Online database of research literature about women in SET, available on the UKRC website.

- Labour market and HE statistics analysis – initially delivered by the Institute for Employment Studies as sub-contractors to UKRC, subsequently brought in-house. Higher Education Institutions – a report on SET education and employment statistics.

- Attrition rates after year 9 – UKRC project to produce a statistical guide to secondary education.

- Mathematical Images and Gender Identities – a project by London Metropolitan University, is an extension to an Economic and Social Research Council funded project; Mathematical Images and Identities: education, entertainment and social justice. The UKRC project develops an analysis of the role of gender in representations of mathematics and mathematicians in popular cultures and the processes of identification around these.

- Exploring the impact of the doctoral study experience on Chemistry and Molecular Bioscience PhD students' career intentions, by gender.
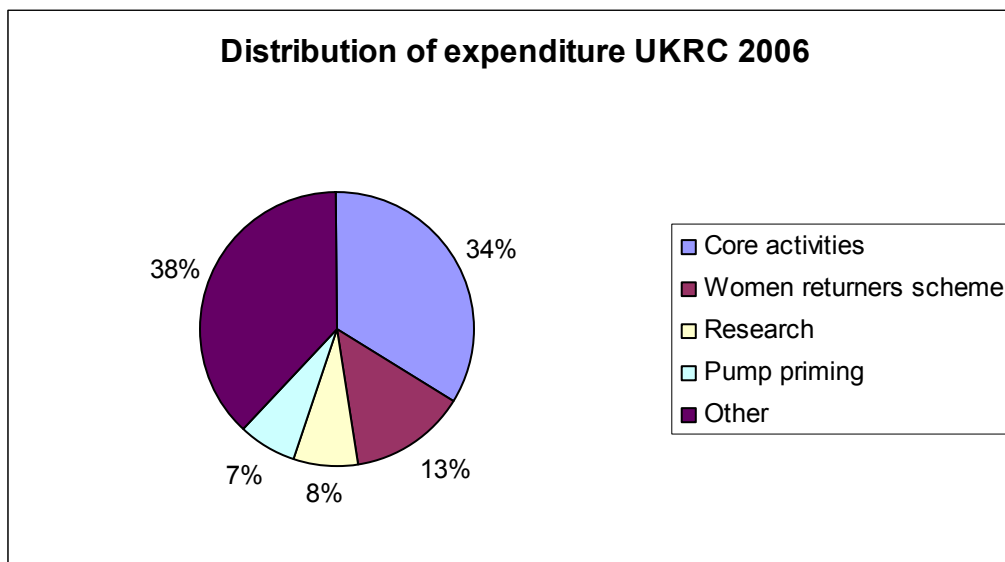
The pump-priming activities mainly cover two things: travel bursaries and ad hoc funding. UKRC bursaries are intended to help applicants apply to attend a conference where they are either presenting a paper' giving a lecture or participating in an event that will directly benefit their career. In 2005 to 2006 the UKRC awarded 20 travel bursaries, totalling £12,000. Ad hoc funding and pump priming grants awarded in between 2005 and the end of 2007 included:

- Cambridge AWISE to set up a networking and mentoring scheme.( £17,190)

- The Diversity Practice to research BME women in the workplace. (£15000)

- GASAT 12 International Conference, held at the University of Brighton. (£20500)

- Katalytik to establish a 'Science Sisters' network to work with schools and enrich science learning. (£23100)

- Eva Lotta Jansson to produce a photographic exhibition on female miners in South Africa. (£3326)

- Concrete History to produce and disseminate a documentary about the construction of Waterloo Bridge – the Ladies Bridge. (£6289)

- British Computer Society – The Women at Bletchley Park - This project will collect the oral histories of the Bletchley women who worked on the first computers  (£5000)

- Business Support Network – Opening Doors Conference - A one-day conference in May 2007 encouraging and promoting opportunities for women in science, engineering and technology in the South West region. (£5,000)

- Wired Sussex – Women in ICT Podcasts .Funding was provided to research, develop and produce a series of six audio interviews with a broad range of women working in ICT in roles where women are largely under represented. (£5,000)

- University of Bath in Swindon – Engineering Taster Days. To market and deliver a series of engineering taster days at Wiltshire College and their motorsport training centre, targeted at girls/women within 6th form, college students, unemployed/employed and community groups. (£1,540)

- Business Link Milton Keynes, Oxfordshire, Buckinghamshire – Milton Keynes Science Festival - Women in Science Strand. This project will deliver a strand of activities (public debates, events, demonstrations etc) at the 2007 Milton Keynes Science Festival (£7,425)

- University of Wales Swansea – Women Shaping the Future of Wales Several awareness and profile raising events and networking activities designed to increase the visibility, empowerment, and participation of women in the SET sphere (£5,000)

- The Diversity Practice – Different Women, Different Places. The aim of this project is to gather primary data to explore the perspectives of BME women - gain an insight into their lives, examine key influences; understand what motivates and drives them at workplace and their constraints, to success and progression. (£15,000)

In the overall context of UKRC activities, research and pump-priming occupy a significant position. In the projected spending plans for the year 2006-07, funding for research projects was set at £195,000, and for 'pump priming' £179116 – the third and fourth largest items of expenditure after core activities and the Women Returners Scheme, and together constituting almost 15% of UKRC's spend (Figure 14).[56]

**Figure 14: Distribution of expenditure**

Given this significance, some of the questions this part of the evaluation addressed were:

- Does the investment support the vision, mission and objectives of UKRC?

- Who benefits from the research?

- Does UKRC fill major gaps in the current knowledge base on women in STEM?

- Would this investment be better deployed in other ways?

Figure 15 shows the current portfolio of research and pump-priming projects funded by UKRC according to the type – or topic - of research.

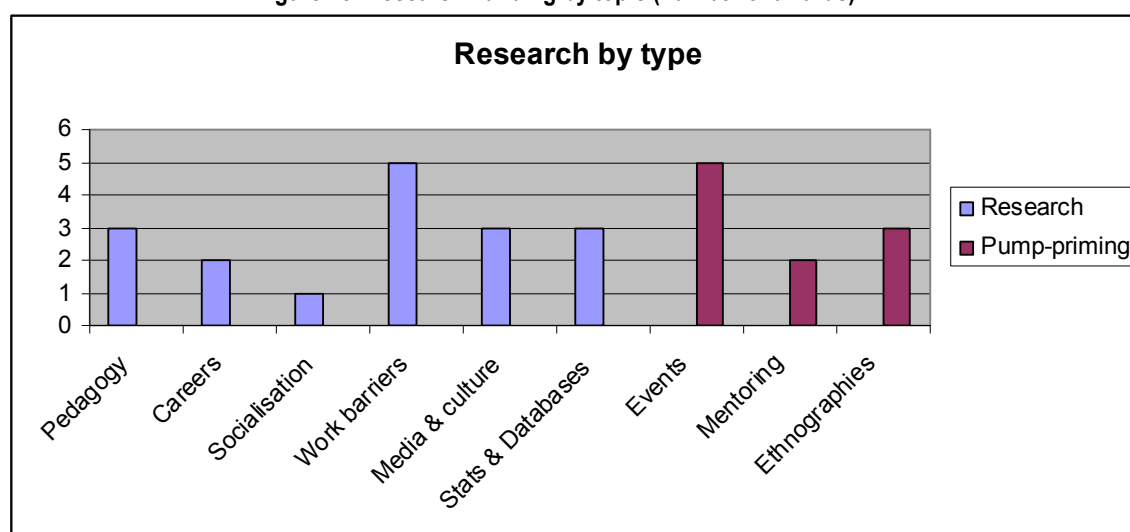**Figure 15: Research Funding by topic (number of awards)**



Figure 15 shows:

- 'Research' and 'pump priming' constitute two different orientations. The research effort focuses on identifying and understanding the processes that shape women's positions in the STEM landscape, with a particular emphasis on the barriers that militate against their participation. Pump-priming projects tend to be more 'hands-on' and pro-active, and the grants awarded are typically significantly less than for research projects.

- Most of the currently funded research projects are aimed at exploring the 'work culture' and how this militates against career progression. The other biggest concentration of research effort focuses on understanding how socialisation processes, popular culture and media discourses compound this situation, through overt and covert stereotyping. Other research topics cover research on career patterns; the effectiveness of training and pedagogic approaches, and reviewing and collecting research results and statistics.

- Most of the investment in pump-priming is allocated to conferences and other dissemination activities intended to raise awareness of the issues around women in STEM. These are supported by 'ethnographic' initiatives aimed at promoting and celebrating women's roles in economic, cultural and social life.

This spread of topics and activities is broadly consistent with UKRC's remit and with the Centre's 'holistic model of change'. Figure 16 shows the results of a mapping of

the research and pump-priming projects funded within the eight elements that make up the holistic model. As Figure 16 shows, all the elements are supported by current research and pump-priming activities. The largest slice of investment – 23% - is allocated to research on employment policies and practices.

**Figure 16: Research and Pump priming by change focus**
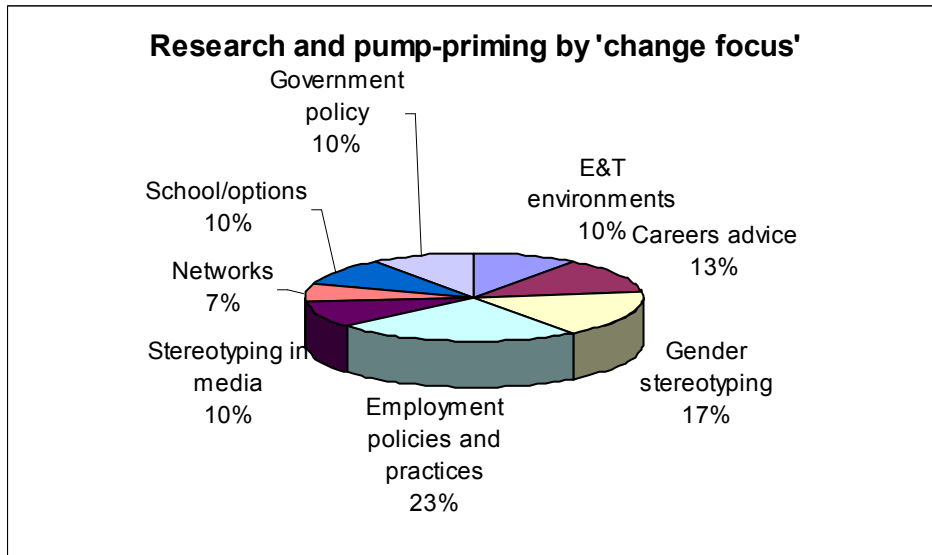


A different perspective on 'relevance' is shown by Figure 16. This categorises funded projects according to the target groups – or 'STEM scenarios' – that are the subject of research activity. As Figure 17 shows, just over a third of project funded are aimed at exploring the lifeworld, position and occupational situation of women in general. The second largest target group – 20% - is 'STEM professionals' – women with qualifications or working in 'higher level' STEM scenarios (for example scientific research). The third largest target group is comprised of women in higher education.

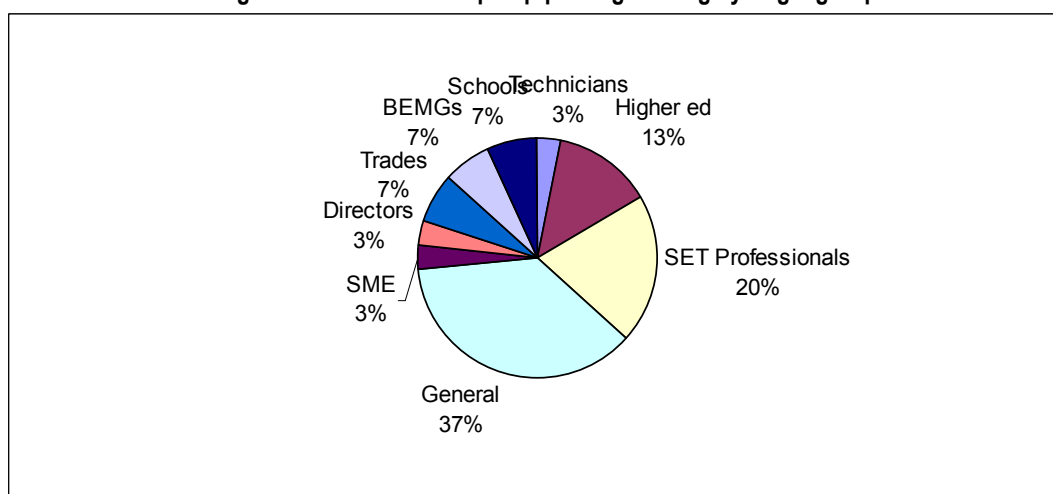**Figure 17: Research and pump-priming funding by target groups**



Figure 17 above suggests that less attention is being devoted to the position of women working at the 'lower' occupational end of the spectrum (for example in non-

professional and 'trade' environments); 'hard to reach' groups, for example women from black and ethnic minority environments, and the school sector. This finding raises some questions about whether there is a 'professional and academic' over-representation in UKRC's research orientation. In contrast, for example, the comparative study reported elsewhere in this Report shows how the German 'Kompetenzzentrum' initiative takes an arguably more societally embedded position, one that positions research and pump-priming across a broader spectrum of social, economic, cultural and demographic experiences.

The dominance of the academic sector, and of academic research agendas, is further illustrated in Figure 18 which shows the distribution of research and pump priming grants issued by UKRC by institutional status of the awardee.

**Figure 18: Distribution of funding by institutional status (no. of awards)**
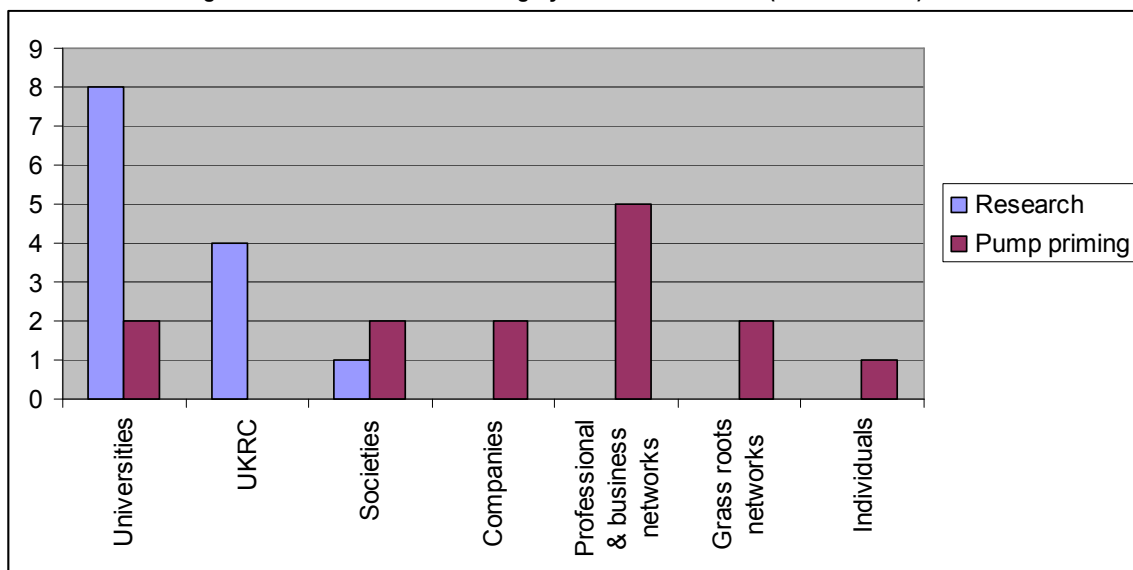


As Figure 18 shows, the UKRC research investment is significantly orientated towards academia, professionals and professional societies, and business, with relatively little support provided to 'grass roots' networks. Some of the data derived from interviews with stakeholders also argues that UKRC is to some extent 'self-referencing', displaying an 'academic bias' that reflects its University-dominated structure and governance. Indeed three of the current research awards went to UKRC's partners and sub-contractors, and two awards went to projects co-ordinated by members of UKRC's National Advisory Group and Expert Group. This award pattern can be explained by the fact that the research was part of the JIVE project which included two Universities. The research was therefore not tendered for, but carried out by these project partners.

Answering questions of relevance in terms of factors like additionality, displacement and substitution is more difficult. A fairly rudimentary examination of the current research funding environment for women in STEM suggests that very little attention, or funding, is being allocated in this area. The current EPSRC research portfolio, which has provided over £3 billion of funds to over 6,000 projects, devotes minimal resources to women in STEM. Approximately ten projects directly or indirectly engage with gender issues, and almost all of these are devoted to more general

concerns around public engagement with science; cultural discourses on science and gender, and curriculum development.  ESRC's research investment portfolio shows a similar lack of focus on women in STEM. Only one project in the £5.2m 'Science in Society' Programme directly focuses on the impact of gender in the regional economy. Two further projects cover work roles of academic scientists and engineering education. In contrast, the US 'Research on Gender in Science and Engineering' Programme, funded through the National Science Foundation (NSF), funds over 50 projects on women in STEM.  Much of the current research investment in the UK, aside from DIUS's own 'Science in Society' initiative, in women in STEM is delivered through European Union funds, notably through European Social Fund (ESF) programmes, like the WOMEN-CORE and 'Breaking Barriers' projects, and through 'Mobility and Human Capital' initiatives like Marie Curie fellowships. The only other notable source of investment is through the National Endowment for Science Technology and the Arts (NESTA) programmes which funds both individual projects (for example 'My Chemist', an interactive game for female SET students) and cross-cutting initiatives like 'Women of the Future' awards and mentoring and entrepreneurship schemes. Against this background, the evidence does support the conclusion that UKRC research and pump-priming investment provides opportunities for research on women in STEM that are not provided from other sources. Indeed, a detailed assessment of four of the projects currently funded concluded that none of the applicants had applied elsewhere for funds and all applicants said they would not have secured funding for their projects from elsewhere.

## 8.4.2.  How the process is managed

The initiative management and administration process has changed since it was first launched. Initially, most projects came from approaches from prospective awardees. All organisations that had approached the UKRC for funding were invited to make an application and a selection was made based on the basis of criteria that covered:

- work that directly addresses or communicates the under-representation of women in SET at a local, regional, national or international level.

- inclusion of a methodology, where appropriate, for mainstreaming the initiative into other organisations.

- inclusion of some form of evaluation of the project to assess its effectiveness

- inclusion of ethnic minorities and disabled individuals and their representation

- projects should reflect the local community in which the project operates.

Selection of projects was then based on an assessment procedure that evaluated proposals on these and other eligibility criteria (such as financial viability).

Subsequent awards rounds changed the application and selection procedures – mainly by making the process more 'open', advertised on the website rather than responsive to approaches from interested applicants.  projects are evaluated by a UKRC Panel. Selection criteria retained the focus on the under-representation of women in SET at a local, regional, national or international level, and emphasised the inclusion of ethnic minorities and disabled individuals, although there was no

reference to embedding projects in the local community in the later rounds. Current selection criteria cover:

- The quality of the activity and how it addresses the gender imbalance and the needs of Women in SET.
- How the activity will be managed.
- If the activity is financially viable and represents value for money.
- What the wider benefits of the activity will be in raising the profile of Women in SET.
- The contribution of the activity to the objectives of the UKRC, in terms of compliance with UKRC's key 'core activities'.

Awards are subject to comprehensive monitoring and evaluation procedures that typically combine:

- Set up meeting with UKRC in Bradford
- Subsequent meetings with the award advisory group during the course of a project
- Monthly progress reports, where projects are evaluated according to how far they meet their planned objectives
- Detailed feedback on draft reports by phone and email

In general, the administration and management procedures for research and pump-priming projects currently in place reflect appropriate standards governing selection, transparency and accountability – particularly in view of the changes made by UKRC to make the application process more 'open' and, secondly, aligning selection criteria more closely with UKRC's mission, objectives and core activities. In fact, the detailed assessment of four of the projects currently funded suggests that award holders find monitoring and evaluation requirements possibly too onerous. As one award holder observed: "If anything the support and monitoring was too intensive".

Two particular process issues highlighted by the case study were:

- Monitoring and evaluation procedures require too rapid a response from award holders
- Insufficient time and resources built into projects to allow for dissemination of results

### 8.4.3. Outcomes and impacts

The in depth assessment of four of the projects currently funded shows a typical output and dissemination profile that encompasses report writing; conference papers and presentations; articles in peer reviewed journals, and press reports. On the basis of this evidence, the average research project funded by UKRC will produce:

- 2 Reports
- 2 Briefing Papers

- 6 Conference presentations and papers
- 1 paper in a peer reviewed journal
- 1 Book chapter
- 2 press or other media references
- 12 research briefings

The limited data available to the evaluation places significant limitations on assessing the impacts of the projects funded, other than drawing conclusions from self-reported impacts assessment of the projects funded, and from the results of basic citation analysis. A citation analysis carried out for 12 of the projects currently funded with UKRC research awards, using Google Scholar, identified only four citations of outputs produced by the lead researchers.  This suggests a relatively modest impact in terms of how UKRC funded research is contributing to developing the knowledge base in the field, although it should be noted that this is a crude measure – and some of the projects are still ongoing, and most have only recently been completed. The four projects who submitted impacts data identified the following impacts associated with their research:

- developing new methodologies and tools (for example a tool to develop students' media literacy skills)
- inputs to policy development (for example producing Guidelines governing the representation of women in SET in the media)
- evidence of 'what works'
- development of new networks and increased capacity for organisations working in the field (for example the creation of an 'enterprise network') including developing international networks

In turn, there is some evidence that the research funded by UKRC generates additionality. All four of the projects assessed in detail reported that their awards had led to further opportunities for new work, or had created new opportunities. These included:

- creating the basis for subsequent applications for larger research funds to funding bodies
- identifying potential products (for example teaching packs)
- setting up new networks


## 8.4.4. Conclusions and implications

- Research and pump-priming occupy a significant position in UKRC activities - the third and fourth largest items of expenditure after core activities and the Women Returners Scheme, and together constituting almost 15% of UKRC's spend
- Research' and 'pump priming' constitute two different orientations. The research effort focuses on identifying and understanding the processes that shape women's position in the STEM landscape, with a particular emphasis on the barriers that militate against their participation. Pump-priming projects

tend to be more 'hands-on' and pro-active and the grants awarded are typically significantly less than for research projects.

- This spread of topics and activities funded is broadly consistent with UKRC's remit and with the Centre's 'holistic model of change'

- Much of the research effort is targeted at exploring the position and occupational situation of women in general, on 'STEM professionals', and on women in higher education. Less attention is being devoted to the position of women working at the 'lower' occupational end of the spectrum (for example in non-professional and 'trade' environments); 'hard to reach' groups, for example women from black and ethnic minority environments, and the school sector.

- This finding, supported by evidence that research funding awards are dominated by academia, professional and business networks, raises some questions about whether there is a 'professional and academic' over-representation in UKRC's research orientation.

- Given the low level of priority allocated to research on women in STEM from major UK and EU sources of funding, the evidence does support the conclusion that UKRC research and pump-priming investment provides opportunities for research on women in STEM that are not provided from other sources.

- Although the commissioning and selection procedures have been revised recently to make the research and pump-priming funding process more open, the fact that funds have been awarded to projects involving members of UKRC's Advisory Group and Implementation Panel may send ambivalent signals about transparency to the outside world. In turn, this situation tends to reinforce the impression that research awards tend to be dominated by the 'academic establishment'. More effort could therefore be given to encouraging more 'grass roots' applicants, and applicants from 'hard to reach' groups to come forward.

- The monitoring and evaluation process for awards seems appropriate, though awardees report some issues with 'over scrutiny', and time and resource constraints.

- The research has generated significant outputs, mainly in the form of Reports, peer-reviewed articles and conference papers, as well as contributing to the development of networks. Again, these outputs, and their associated impacts, are likely to be of more benefit to the academic and research community rather than for practitioners and policy makers.

## 8.5. UKRC Promotional activities

### 8.5.1. Introduction

The intersection between the UKRC as a 'resource centre' to support Women in SET and its subsequent promotional activities provides a clear 'service scenario' for the evaluation. Most notably because section 3 outlined how the envisioned role and mission of the UKRC has developed from an understanding through various policy initiatives that the centre should act as a 'focal point' for information, advice and dissemination. This section will look specifically into UKRC promotional activities that attempt to raise the profile of women in SET and the marketing and communication

of key events.  In particular, this case study looks at the following elements and sub-activities of UKRC's promotional work:

- Raising the profile of women in SET: web based information systems (the Get SET database)

- Marketing and Communication: the Annual conferences and the Photographic Exhibitions

This case study uses the activities above to explore how the UKRC's promotional work fits into its mission and objectives and what contribution they make to the UKRC's position in wider policy contexts. It explores issues around 'fitness for purpose', implementation and management processes as well as outcomes and impacts for those who use them.

## 8.5.2. Background: UKRC's promotional activities in the context of its mission and objectives

Raising the profile of women in SET is an integral part of UKRC's remit.  This becomes clear from the Government response to Set Fair (2002) which charged the Centre with the following three sets of activities, all with a promotional focus:

**1. Disseminating and Sharing Information**

A key role for the new centre will be promulgation and information sharing. Clearly for key occasions and building relationships with other organisations face-to-face means of information sharing will be vital. However, it is the Government's intention that this should be backed up by good web facilities offering:

- a resource database of information about supportive mainstream policies, initiatives and budgets that can be drawn on by employers and women's groups;

- texts of advice and guidance and a database of good practice examples;

- statistical and research information;

- details of relevant women's organisations and their current activities; and

- links to other sites e.g. relevant Government departments, professional SET organisations and relevant employers.

**2. Expert women's database**

Building on the SET Fair recommendations the Government will provide finance for the new centre to set up a database of expert women in SET. This must be respected, be broadly based in terms of skills cover and be well used. It must also be widely promulgated; comply with data protection law; be consistently updated; and consider appropriate screening mechanisms. Once set up, relevant public bodies will be required to consult it. It is more likely to be successful if it builds on the experience of previous similar initiatives and is operated in partnership with those that have such

experience. It must include women from industry, business and the public sector, including higher education. It will be made widely and easily accessible.

**3. Raising the Profile of Women in SET**

The Greenfield report was rightly concerned to see a higher profile for successful women in SET. The new centre will be tasked to do this and will need to explore how it can be done most effectively perhaps through media and marketing campaigns. There are a number of existing awards and prizes that both recognise achievement and attract attention within the relevant fields of SET and beyond.

As a result, 'raising the profile of women in SET' is one of six sets of services included in UKRC's Framework for Action.[57]  Here this activity is defined as a supply side issue, suggesting that the aim is to address those structural factors which prevent women from entering and returning to the SET workforce (e.g. through gender stereotyping by family, friends, the media, self and others).  Indeed, a range of activities carried out under the heading of promotional activities (including, for instance, the Photographic Exhibition, media training for women, poster campaigns, the Annual Conferences and profile raising events, the Get SET database, representation of women in TV dramas) clearly aim to address this by seeking to challenge stereotypes and showing female scientists in a positive light.  This focus and activities show a clear overlap with UKRC's empowerment of women value (see section 4.2) which aims to address the external barriers women face in SET.  Clearly, however, these promotional activities go beyond the structural focus to address the individual, not only directly through the media training but also indirectly by potentially helping women overcome their own self-image.  Indirectly, we might also expect the promotional activities to influence the demand (that is, employer) side by surfacing – at organisational and / or individual level – thinking patterns which are detrimental to the recruitment of more women into SET jobs.  In this sense, the promotional activities also demonstrate a link to the second of UKRC's values: culture and organisational change.

UKRC's promotional work therefore has a clear link not only to the remit it was originally given but also to its two core values.  In the sections above we will explore in more detail a sub-set of UKRC's promotional activities in order to explore questions around fitness of purpose, outcomes and impacts.[58]

## 8.5.3.  Web based information systems: the GetSET Database

An important element of UKRC's profile raising activities is the GetSET database. Embedded in UKRC's website (http://www.ukrc4setwomen.org/html/getset-women-database/), the aim of this online database is to "raise visibility and the profile of women in SET".  The purpose of the database is to provide "the media and other organisations with access to a wide variety of women, at various stages in their

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[57] SETting the Standard. A Guide to: The UKRC Resource Centre for Women in Science, Engineering and Technology, p. 8

[58] In doing so it will draw on the following information sources: the website survey, participants survey, web searches, observations and interviews.

science, engineering and technology careers, who have registered their details and can be approached for promotional and work related opportunities."[59] Women registered on the database may offer to act as some or all of the following:

- Appointees on public bodies.
- Media candidates who are willing to further challenge the gender imbalance when giving commentary of SET concerns on television, radio and in the press.
- Speakers,
- Mentors
- Positive role models.

The database was initially run by WITEC but the contract ceased in 2006 due to IPR issues. It was recently integrated into UKRC's women returner work. A new marketing and recruitment campaign for GetSET has been developed to coincide with the launch of the new website in order to boost registration numbers to the website.[60]

**Outputs**

As of March 2008, the GetSET database achieved 1237 registered users[61] and, between February 2007 and January 2008, has experienced a consistent incremental increase in registrations. Nevertheless, the overall target of 2000 registered live users was not reached.[62] Moreover, there is currently a large discrepancy between registered users and 'live' users: according to information provided in March 2008, of the 1237 registered users only 517 were classified as 'live' (ie having completed all the necessary information to allow their profile to be shown in the public database). This is significant as only 'live' users' details are fully accessible by those making a query.

The intended beneficiaries of the database are women scientists, engineers and technologists. This is a change from the first two years when the database addressed only senior women. Indeed, looking at the career history of registered users, we can observe that the database now includes the details of a range of individuals at different stages in their career, though nearly half of registered users describe themselves as being at an advanced stage in their career. 47 per cent of registered users who have provided this information describe themselves as in an advanced stage of their career. Interestingly, however, nearly 30 per cent are at an early stage in their career, indicating, perhaps, that they see the database as an opportunity for networking or generally become known.

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[59] http://www.ukrc4setwomen.org/html/getset-women-database/
[60] UKRC progress report to NAG, November 2007
[61] Information provided by UKRC as part of the activities schedule.
[62] Source

**Table 8-3: Profile of GetSET registered users**

| Categories | Sub category | Number |
|---|---|---|
| Total | Number of users registered | 413[63] |
| | | |
| By career stage | Early Career | 96 |
| | Mid Career | 82 |
| | Advanced | 156 |
| | Blanks | 79 |
| | | |
| By Sector | Private Industry | 103 |
| | Education general | 80 |
| | Further Education | 20 |
| | Higher Education | 49 |
| | Pre 16 Education | 16 |
| | Private Industry/Public Sector | 1 |
| | Public Industry | 50 |
| | Public Sector | 27 |
| | Self employed/Own enterprise | 6 |
| | Self employed/Own enterprise/Public Sector | 1 |
| | Voluntary/Not-for-Profit | 9 |
| | Voluntary/Not-for-Profit/Further Education | 1 |
| | Blanks | 46 |

**Source: GetSET database 2008**

Looking at the break-down of registered live users below, we can further observe that the database has attracted the interest of women from a wide range of SET sectors, though the natural sciences and engineering are particularly prominent.

**Figure 19: Registrations in the GetSET database by sector of expertise**
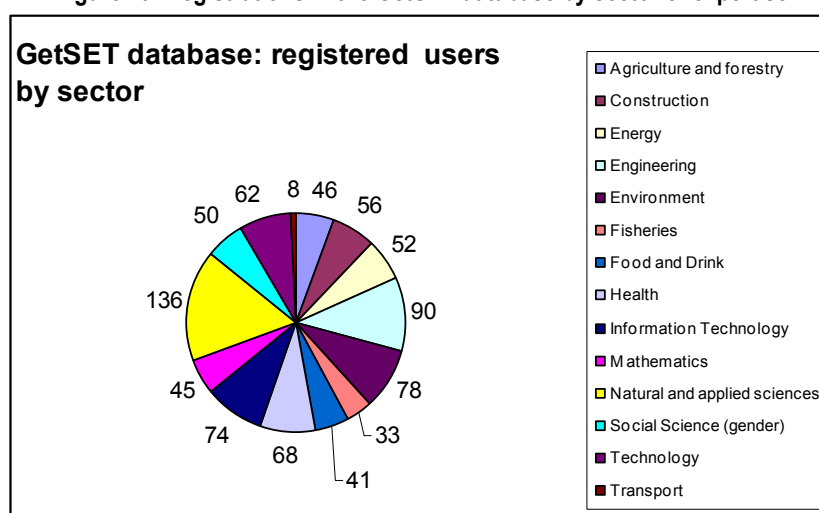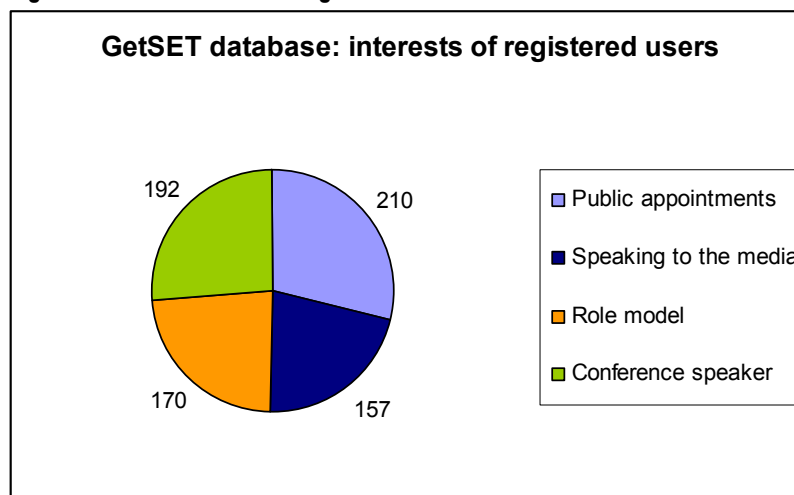


Source: GetSET database, March 2008 (multiple entries per registered individual are possible)

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[63] The evaluation has not found an explanation for this discrepancy to the figure provided directly by UKRC.

Looking at the interests of those women registered on the database, we can note a fairly even split between public appointments and speaking at conferences with a slightly lower degree of interest in being a role model and speaking to the media.

**Figure 20**: **What are women registered on the GetSET database interested in?**

**GetSET database: interests of registered users**



- Public appointments
- Speaking to the media
- Role model
- Conference speaker

Source: GetSET database, March 2008

## 8.5.4. Outcomes and impacts

In the first two years of UKRC's existence (2004/05 and 2005/06), the intended outcome of the GetSET database was restricted to providing a source of expertise for the media and only contained data for senior women. However, during this period the database received no inquiries from the media[64] and so outcomes and impacts of this tool were clearly limited.

After the contract with WiTEC (the organisation that had been running the database) ceased in 2006, the database was brought into the central work of the services for women team as of autumn 2007 and "moved and refined as part of the web redesign"[65] towards the end of 2007. As a result, the database can now be found under this URL: http://www.ukrc4setwomen.org/html/getset-women-database/ though an alternative ULR seems to guide the user to the same page (http://www.getsetwomen.org/html/getset-women-database/).[66] As a result of this process, it is now possible to track the pages viewed on the UKRC website, and statistics indicate that the GetSET database has been in the top ten page views for the months December 2007 through to February 2008. As the table below indicates, this section of the website scored high across the registration, search, add and edit your profile pages, representing the top 3 pages viewed in January.

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[64] Information provided by UKRC for the activities schedule.
[65] UKRC activities schedule.
[66] The point was previously raised about the risk of multiple ULRs and shall not be repeated at length at this stage. However, one single URL would minimize confusion for the external user.

**Table 8-4**: **Top 10 page views of UKRC website**

| URL Pages Viewed | Dec-07 | Jan-08 | Feb-08 |
|---|---|---|---|
| html/athena-swan/ | 908 | 1095 | 771 |
| /html/about-ukrc/ | 599 | 989 | 718 |
| /html/women-and-girls/ | 597 | 827 | 649 |
| /html/resources/ | 435 | | 476 |
| /html/getset-women-database/search/ | 433 | | 1008 |
| /html/enquiries/ | 405 | 809 | |
| /html/news-and-events/ | 382 | | 1063 |
| /html/research-and-statistics/ | 372 | 625 (*search*) | |
| /html/education/ | 318 | | |
| /html/raise-your-profile/ | 312 | | |
| html/getset-women-database/add-and-edit-your-profile/ | | 1491 | 882 |
| html/getset-women-database/ | | 1189 | 571 |
| /html/getset-women-database/search/ | | 1146 | |
| /html/athena-swan/ | | | |
| /html/getset-women-database/register/ | | 821 | |
| /html/news-and-events/events/ | | 595 | |
| /html/news-and-events/news/ | | | 488 |
| /html/news-and-events/ukrc-conferences/2008-conference/ | | | 798 |

Source: website statistics derived from the online log file analyzer: AWstats @ http://awstats.sourceforge.net/.

The bringing in-house of the database has resulted in a widening of the intended outcomes of the database which are now described as not only providing a source of expertise for the media but also to engage women as role models, to develop network communities, to provide a resource for UKRC. UKRC has been using the database to promote public appointments to those registered in the database.[67]

However, as of yet the changes made to the database as a result of the new website do not seem to have made a significant impact on the external reach of the database. No media enquiries have been reported, for instance. Furthermore, there are few links to the database embedded in other websites. Six organisations refer to the database: the Royal College of Nursing, Prowess – Promoting Women's Enterprise, Cambridge AWISE, the Female Faculty Network Twente and the Research Staff @ Leeds blog.[68] This compares to 449 organisations which carry a link to the Science Media Centre on their webpage, for instance, an organisation that descibes itself as "first and foremost a press office for science when science hits the headlines."[69]

Indeed, the provision of expertise to the media is an area of overlap with the Science Media Centre. This becomes clear when reading how the Centre describes itself: *"The Science Media Centre is first and foremost a press office for science when science hits the headlines. We provide journalists with what they need in the form*

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[67] UKRC, progress report to the NAG, November 2007.

[68] Links in newsletters or other documents have not been counted.

[69] Though due to the large number of links cross-links on the Science Media website and links in documents could not be removed from this count.

*and time-frame they need it when science is in the news - whether this be accurate information, a scientist to interview or a feature article. (…) In between these big stories, we are busy building up our database of contacts on the areas of science most likely to feature in the news. This allows us to be pro-active and puts us in a position to facilitate more scientists to engage with the media when their subjects hit the headlines."[70]*

This overlap was identified at UKRC's 2008 Annual Conference:

Vivienne Parry's speech did in her own words "drop a few grenades into the discussion" as it raised a few issues about the way women scientists may be less likely to be interviewed about their research. Her view was that the UKRC did not realise that women should be signed up to the Science Media database, which is the first port of call for journalists. Journalists do not see women scientists as unsuitable they just aren't accessible/available during tight media deadlines. UKRC subsequently promised to address this situation.

As part of the ongoing work on the database it will clearly be important to reflect on the relationship between these two databases.

## 8.5.5. The Annual conference and Women of Achievement in SET Photographic exhibition

The Annual conferences and Photographic exhibition are important aspects of UKRC's promotional work.

The Women of Achievement in SET Photographic exhibition aims to raise the profile of women in SET and targets women scientists engineers and technologists; public, the SET community and government. The exhibition has received over 200 nominations since 2006."The exciting collection of portraits both celebrate and contribute to the collective and individual contribution that women are making to SET leadership, the communication of SET and SET discovery"[71]

Four Annual Conferences have been held so far:  Launch of UKRC (2004), Gender and leadership (2006) Climate change and energy (2007), The Representation of Women in the Media (2008)". The purpose of the conferences is to promote the work of the UKRC and to develop awareness and knowledge on themes of the conference, to provide networking opportunities and to share best practice.[72]  The Annual Conferences target women, employers, professional institutes, media and the SET community. Annual conferences have received sponsoring from Atkins, Aurora, Women in Technology, Summit skills, Sheffield University and the cooperative group.

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[70] http://www.sciencemediacentre.org/pages/about/
[71] The UKRC annual review (2008)
[72] UKRC activities schedule.

**How are these events managed and implemented?**

The Annual Conference and Photographic exhibition, as well as any other high-profile events, are managed by UKRC's communications and public relations team. This consists of an events manager, a marketing assistant, officer, information officer and web coordinator.

The planning of events starts up to six months prior to an event. At this stage specific activities/agendas are sketched, speakers scoped, information dissemination decided, photographers arranged. The themes of the Annual Conferences are decided by UKRC's senior management team and are based on government policy, UKRC priorities and current issues for Women in SET. The purpose of the conferences is to raise the profile of the UKRC and promote it alongside others and to encourage debate on themes pertinent to women in SET.

The invitation of attendees to both events is made through the communications team via initial emails/calls to contacts on the UKRC database (including SET organisations, individuals, research councils & professional bodies etc.). For the annual conference specific networking groups are contacted to relate to the theme. After the event attendees are asked to provide feedback, this is relayed to specific speakers (if appropriate) and is used to improve future events. There is also an event debrief for the communications team to air any issues.

For the planning of events the team can also draw on the support of a PR agency (Trimedia) which has been recruited to carry out specific promotional activities and support the team with its media expertise, knowledge and contacts. In the case of this year's Photographic exhibition, for instance, Trimedia helped to promote case studies of high achieving women and press releases to support awareness of the event. In 2008 the Agency also had a prominent role in the implementation of the Photographic Exhibition on the day.

**Outputs: what type of audience did the events reach?**

The four conferences reached and approximate audiences of 1,000 people.[73] Data available for the last three conferences allows a closer analysis of the type and range of people attracted.

The table below indicates not only a consistent number of delegates for the past three conferences but also much consistency in the gender break-down. The number of women is also consistently high with only little fluctuation in the share of men amongst delegates 8.7 per cent over the past three years).

**Table 8-5**: **Number and gender of conference attendees 2006-2008**

|  | **2006** | **2007** | **2008** | **Total** |
|---|---|---|---|---|
| Number Attended | 247 | 209 | 221 | 677 |
| Women | 232 | 182 | 204 | 618 (91.3%) |
| Men | 15 | 27 | 17 | 59 (8.7%) |

**Source: UKRC delegate lists 2006-2008 (no details for the 2004 conference were provided)**

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[73] UKRC activities schedule.

Interestingly, this gender imbalance – and the wider issue of a gendered approach to SET – was reflected on critically at the 2008 Annual Conference as the observation below illustrates.

> One overall impression from the conference was the lack of men attending. Indeed one female delegate asked the morning speakers about the lack of men at the event, the delegate went on to talk about what she saw as 'the real issues' which were that women were failing to distinguish themselves to men and were not networking with each other for their own advantage. Indeed a continuous point throughout the day from some delegates was that a gendered approach to SET was missing the point about science, before any change can occur the public need to know what 'science' is by making it mainstream. "Why do you have to choose between science and arts at school?" What motivates women into SET careers is the love of science and the understanding that it is relevant to our everyday lives. "Being a woman scientist or engineer can actually stigmatise you – you should just be called a scientist".

The figure below shows the composition of the three last UKRC conference by allocating delegates to types of organisations.

**Figure 21**: **Participants of UKRC conferences 2006-2008 by organisational affiliation**
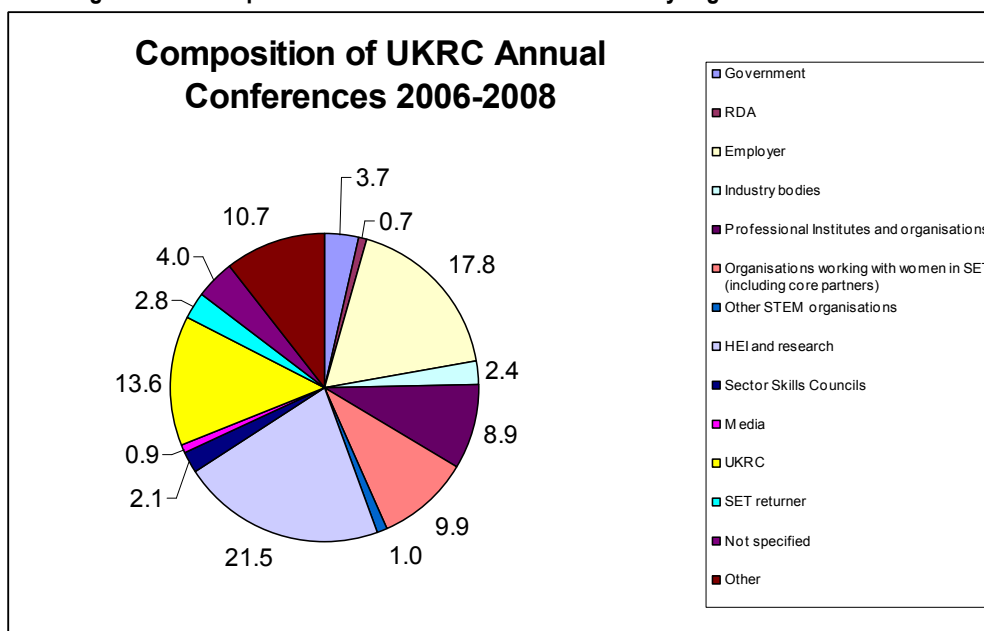


In terms of the audience reached by the Annual Conferences, the chart above indicates the following broad trends:

- It confirms UKRC's focus on Higher Education, with 21.5 per cent of delegates in the last three years coming from this sector.
- Employers comprise the second largest group of delegates (17.8 per cent)
- Delegates from UKRC (both the Centre and the hubs) make up the third largest group of delegates.

- Conversely, only a small number of representatives from the media are being reached (0.9 per cent). Even at the 2008 Annual Conference, the theme of which was the media, only five delegates could be classified as belonging to the media in the widest sense. Two of these belonged to large media organisations (the BBC and Reuters). There were no journalists from the large print media present.

- Whilst over the course of the three years women in SET organisations make up around 10 per cent of delegates, both the number of delegates and the number of organisations present slightly reduced between 2006 and 2008. Thus, in 2006 there were 32 delegates representing 19 women in SET organisations (including UKRC's core partners). In 2008, there were 23 delegates from 18 women in Set organisations (including UKRC's core partners).

- Few representatives from Sector Skills Councils (2.1 per cent) and Government organisations (3.7 per cent) attend.

Finally, it is interesting to note that UKRC conferences attract repeat visitors. 11 organisations have attended all three conferences since 2006. By and large these tend to be organisations that have developed a close working relationship with UKRC, be this employers (e.g. Quinitec, Atkins or National Grid), delivery partners (the Open University), sub-contractors (MentorSet) or organisations with whom UKRC was in a funding relationship (e.g. Imperial College). A further 58 organisations have attended two conferences. Three of these are UKRC sub-contractors, two of them are partners and a further five are otherwise affiliated to UKRC. 220 organisations have attended one Annual Conference.

In terms of the purpose of the Annual Conferences and the intended audience, the figures above suggest the following conclusions with regard to the effectiveness of recruitment approach:

- Over the last three years, the Annual Conferences have attracted a good range of organisations and representatives of all target groups are regularly present.

- However, some of the anticipated target groups are more present than others. The relative dominance of research and Higher Education Institutions and the relatively low representation of the media, for instance, could indicate that further work is needed to reach beyond familiar sectors.

- There is a core of organisations that tend to attend UKRC Annual Conferences regularly, and closeness of relationship to UKRC appears to be one deciding factor for this.

- The range of organisations present at the previous conferences varies in line with the theme proposed. Nevertheless, this year's conferences, though focusing on the Media, attracted few journalists and other media representatives. This suggests that more work may be needed to tailor recruitment so as to attract non-traditional audiences to the thematic conferences. Indeed, one of the employers interviewed for this study felt, for instance, that UKRC "should be careful of sending out too much irrelevant information to employers – the annual conference this year is about media representation, this is not useful to us. It's an issue of the 'direction' of information" [S35].

**Outcomes and impacts of the awareness raising activities**

The data collected as part of this evaluation suggest that both events are able to make a contribution to raising the profile of women in SET. However, in both cases an assessment of the impact achieved remains difficult as both events are to an extent symbolic in nature, aiming at awareness raising - a long-term process.

The example of the 2008 Photographic exhibition illustrates this point. The event, held on the eve of the 2008 UKRC annual conference within the Royal Society building, appeared to attract a relatively diverse group both in relation to age, seniority, gender (although women were the majority) and race. It provided both a social and networking opportunity as well as a chance for promoting the value of representation and role models for women in SET. Among organisers and participants the symbolisms of the event – and hence its potential contribution to changing mindsets about women in SET– was acutely felt, as the observation from the 2008 event below describes.

There was a sense that the real value of the event went beyond that evening and lay in the touring and exhibition of the images and their future audiences. The symbolic importance of these images within the Royal Society itself held particular weight. The announcement by the Royal Society that they had purchased a number of the images and were committed to displaying these in conspicuous positions was welcomed (cheered) and highlighted the audiences belief in the need to challenge under-representation at the level of image as well as employment.

Some of the most compelling arguments for the value of the event, the award and the photographs themselves, were made by the two previous winners who provided accounts of the impact of the award on both their individual careers and the institutions in which they were based. The presence of one winner's teenage daughters and husband at the event provided yet another interesting image and symbol of the ability of women to succeed at the highest level within SET careers and reconcile this with family life, something which was later noted by a participant to be a rare but valuable image.

In a number of ways, the UKRC annual conference has also shown its potential to make an impact. In section 7.6 above we have reported that the conferences are valued by some stakeholders as opportunities to network with other organisations. These events therefore support UKRC's coordinating role in the women in SET landscape. In terms of raising the profile of women in SET, it certainly seems likely that the practice at the annual conferences of using predominantly female speakers contributes to this objective. Interestingly, however, at the 2008 Annual Conference this raised a debate about this positive action approach to addressing structural factors to gender inequalities in SET:

Having spoken to female delegates many said they were asked to attend by their employers because they were women. They highlighted that there was a distinct need for high profile men to speak about women in SET – this was most obvious when a male speaker in the morning session opened his speech to the conference with an anecdote about how he had asked Baroness Greenfield whether she should speak at the event and she replied 'why ever should I you are the minister for

science' - it highlighted the point that men need to feel like they can own this issue as much as women.

## 8.5.6. Conclusions

UKRC carries out a range of activities in order to raise the profile of women in SET. These are part of, and contribute to, primarily two aspects of the holistic model for change: Gender stereotyping and self-stereotyping by girls and women; family, friends and the media reinforcing stereotyping. They are also broadly in line with UKRC's two core values of culture change and individual empowerment.

The promotional activities explored in greater depth as part of this case study (the GetSET database, the annual conferences and the photographic exhibitions) clearly address a need to challenge the still dominant picture of scientists as 'men in white coats'. Some aspects of these clearly work well: the GetSET database receives an ongoing stream of registrations; the photographic exhibition has found a permanent home in male-dominated environments and female scientists photographed have shown how they can potentially become powerful symbols for equality in SET; the Annual Conferences are consistently well attended, popular and high profile events which provide a forum for female scientists to speak, network and learn.

Nevertheless, perhaps because of their very nature, the promotional activities have a higher degree of uncertainty in terms of their impact. Ultimately, both photographic exhibition and the Annual Conference aim at changing the way individuals think about science and scientists. This, by definition, is a long-term process. In addition, there are currently perhaps some practical factors which influence the effectiveness of these activities. In the case of the GetSET database it is the overlap with the better connected and better known Science Media Centre database together with a description of this tool which suggests it is becoming an internal tool more than one accessed by external individuals and organisations (the database is found in the "raise your profile" section of the database rather than under a heading called, for instance, "find an expert"). In the case of the Annual Conferences the challenge is expanding the audience beyond those organisations and individuals most easily accessed to further benefit from what is a high-profile and well-run event. In the case of the photographic exhibition any wider societal impact is likely to be gradual and subtle as the impact is largely symbolic.

# 9. CONCLUSIONS AND RECOMMENDATIONS

## 9.1.  Introduction

This section summarises and integrates the main results of the evaluation activities outlined in the preceding sections. Drawing on these results, we present the main conclusions of the evaluation and provide recommendations to help support the future development and evolution of UKRC.

In accordance with the evaluation design and approach, as set out above in Section 2, this Section is set out as follows:

- Firstly, on the basis of the 'mapping' activities, we consider the role and position of the Centre in the women in SET' landscape; review and assess the appropriateness and relevance of its mission, purposes and objectives, and review and assess the appropriateness, relevance and coherence of the models used to deliver those objectives.

- Secondly, on the basis of the 'effects' evaluation, we focus on the Centre's outputs, and the outcomes and impacts associated with its activities.

- Thirdly, using the results of the 'process' evaluation, we consider whether the way the programme is managed is 'fit for purpose'.

- In the concluding part of this Section, we take a 'developmental' view of the evaluation results and provide recommendations to help inform strategic decisions about the longer term future of UKRC, and to help improve the relevance, efficiency and effectiveness of the Centre.

For each section, they key evaluation questions posed in the evaluation methodology are addressed in turn.

## 9.2.  UKRC's position in the 'women in SET' landscape

*How does the Centre interact with other initiatives and what value added does it bring in reducing fragmentation and re-invention?*

- On the one hand the setting up of UKRC is seen as a timely and much needed innovation in a 'crowded' environment that is characterised by a range of disparate and fragmented organisations involved in supporting women in SET. A number of stakeholder groups perceive the Centre as playing a pivotal role and one that represents a single voice on gender issues around SET education and occupations.

- However, there is an alternative view that UKRC's co-ordination role is weak; it has taken too long to secure and consolidate its role as a 'force for co-ordination'; it has not sufficiently established itself as an umbrella body for women in SET; its work reflects in some respects duplication of effort, and it has failed to provide leadership.

- Against this background, it could be argued that the model of partnership adopted by the Centre is less a 'co-participative' and more of a 'sub-contracting' model. However, it should be noted that to some extent UKRC

are constrained by their remit and the parameters government have set for them.

### *What is distinctive about the UKRC mission, purposes and structure within the 'STEM' landscape?*

- Though UKRC operates in a crowded field, it offers, in principle, distinctive advantages to other players. Its 'federated' hub and spoke structure allows UKRC to do work other organisations admit to not being able to do (for instance in the area of mentoring).Its cross-disciplinary and cross-sectoral remit, its work on both the demand and supply side of the SET labour market, the breadth of resources that it offers through its website and its role as a co-ordinating agency in a fragmented 'community of practice' are seen as offering significant value added to current provision in the women in SET domain.

### *Is the programme sufficiently focused to have an impact on the key policy objectives outlined in the Government 'Strategy for Women in Science, Engineering and Technology'?*

- Overall, the mission and purpose of UKRC as expressed in its key documents can be regarded as closely aligned to the key government 'women in SET' policy agendas and instruments that have been the main drivers for its conception and implementation.

- The areas where the evidence suggests that UKRC's work is likely to make a significant contribution to policy and practice objectives for women in SET include: recognising and rewarding good employers (through for example the Athena Swan Charter); disseminating and sharing information – particularly the Centre's on-line Content Repository, which provides an extensive and valuable resource base for users and a platform for collaborative knowledge creation and knowledge sharing; collation and dissemination of UK gender statistics; pump priming innovation and disbursement of travel bursaries; supporting SET women returners.

- There are some areas where questions could be raised about the impact of particular activities within the programme, and which could divert resources and 'focus' from other priorities and objectives. These include Kite Marks and other awards; the 'GetSet Women' database; some dissemination activities – for example the 'Progress' Newsletter -  some publicity and public relations work.

### *Are the models embedded in the Programme appropriate ('theory of change'; conceptions of learning and behaviour change; empowerment; equality; service delivery)?*

- UKRC's activities are based on two core values relating to firstly culture and organisational change and secondly the empowerment of women: to increase the participation and position of women in SET there has to be a change in the organisation and culture of the SET learning and work environments; to tackle the pervasive structural conditions that inhibit women fulfilling their true potential, positive action is essential to support women in SET.  This could be termed a 'transformative' model of gender equality, which draws to some

extent on feminist theory and practice, and which contrasts with, for example the German 'Kompetenzzentrum' model, reflecting a 'human and social capital' position based on a 'no difference' gender perspective.

- It could be argued that the 'theory of change' that underpins UKRC's core values, combined with the remit of the organisation, over-emphasises the importance of attacking gender inequalities at the level of theoretical and intellectual discourses – hence the dominant role played by academic agendas and academic stakeholders in the Centre's governance structures and work programme. This position appears to prioritise 'abstract' knowledge above 'tacit' knowledge and reduces opportunities for practitioners and grass-roots constituencies to contribute to promoting change.

- The nature of the barriers to the participation and empowerment of women in SET are described and incorporated in the UKRC's 'holistic model for change', and are reflected in the nine 'core tasks' that make up UKRC's strategic and operational programme. Amongst UKRC's stakeholder community, and to an extent in its hubs, this model is not widely or well known.  Whilst the holistic model for change is by and large regarded as appropriate for the task that UKRC has set itself and its role as an umbrella organisation, some stakeholders also recognise practical problems in working towards this model. The main issues are the danger that taking a 'gendered' approach to SET diverts attention from the over-riding need to 'mainstream' science within society in general; the danger that UKRC's resources will be spread too thinly; the lack of human and infrastructure capacity necessary to implement effectively such an ambitious and 'joined up' agenda.

*Is the Centre's 'Framework for Action', and its associated delivery model appropriate for its mission and objectives, and is the balance of stakeholders and of beneficiaries appropriate?*

- The UKRC 'framework for action' and work programme integrates nine core tasks. These incorporate: implementing a recognition scheme for 'good employers';  sharing good employment practice for women in SET;  disseminating and sharing information;  assembling and making available the 'GetSet Women' database online; compiling and providing statistics on women in SET; raising the profile of women in SET; research and pump-priming activities; supporting women returners; co-ordination work with women in SET organisations, including supporting Open University courses and promoting collaborative working through, for example the Implementation Group and Industry Group.

- In carrying out this work programme, UKRC has produced an extensive and diverse range of products and services, targeting a wide spectrum of important stakeholders in the women in SET landscape. In broad terms, the distribution of activities is consistent with UKRC's remit and 'holistic model for change'.

- The evaluation suggests that some constituencies are consistently highly represented, notably higher education, the scientific and engineering societies, and the business community; while others remain less involved (e.g. 'grass roots' networks and 'hard to reach groups', for example women from 'poorer' educational and cultural backgrounds).  Whilst this reflects the organisation's remit, there remains a task to broaden engagement with organisations and individuals to further support UKRC's activities.

## 9.3. Outputs, outcomes and impacts

***What outputs have been produced by the Centre and what contribution do they make to the Programme aims?***

- The spectrum of activities covered by UKRC's work, involving nine core task 'clusters' and over 60 activities, is wide, diverse and complex. UKRC has produced an extensive and diverse range of products and services, targeting a wide spectrum of important stakeholders in the women in SET landscape. The main outputs encompass: information and knowledge products and services (the website; the on-line and physical libraries; statistical databases); educational and training products and services (returners' courses; media training; good practice guidelines); organisational and cultural change tools and services (the culture analysis tool; Kite Marks; diversity and inclusion awards); awareness-raising and profiling products and services (newsletter and magazine; photographic exhibition; poster campaigns; products and services to promote career progression (job matching service; mentoring services; 'positive outcomes').

- There are some areas where questions could be raised about the value of particular activities and outputs. For example, of the 19 activities for which a specific target has been specified by UKRC, 6 activities failed to reach that target. These, and other activities where activities and outputs appear to be contributing less than might be expected, include: Kite Marks; the Manufacturing Excellence (MX) Awards and UKRC Award for Diversity and Inclusion; Champions for flexibility; the 'GetSet Women' database; the 'Year in Industry' initiative; the UKRC 'Peer Mentoring Circle' initiative.

- There are some areas where it remains unclear what contribution activities and outputs have made. These include: the Culture Analysis tool; some dissemination activities – notably the 'Progress' Newsletter and 'Spark' magazine, as well as on-line services such as the information enquiry service and the library; the policy engagement work; publicity and public relations; 'Raising the profile of women in SET'(e.g. the impact of the annual 'Photographic Exhibition'); media discourses and media training; poster campaigns; the GetSet Women database; co-ordination work with women in SET organisations.

***What kinds of research projects have been funded and in what ways do they contribute to the core objectives of the Centre?***

- Research and pump-priming occupy a significant position in UKRC activities - the third and fourth largest items of expenditure after core activities and the Women Returners Scheme, and together constituting almost 15% of UKRC's spend. Research and 'pump priming' constitute two different orientations. The research effort focuses on identifying and understanding the processes that shape women's position in the STEM landscape, with a particular emphasis on the barriers that militate against their participation. Pump-priming projects tend to be more 'hands-on' and pro-active and the grants awarded are typically significantly less than for research projects.

- This spread of topics and activities funded is broadly consistent with UKRC's remit and with the Centre's 'holistic model of change'. Much of the research effort is targeted at exploring the position and occupational situation of women in general, on 'STEM professionals', and on women in higher education. Less attention is being devoted to the position of women working at the 'lower' occupational end of the spectrum (for example in non-professional and 'trade' environments); 'hard to reach' groups, for example women from black and ethnic minority environments, and the school sector.

- Given the low level of priority allocated to research on women in STEM from major UK and EU sources of funding, the evidence does support the conclusion that UKRC research and pump-priming investment provides opportunities for research on women in STEM that are not provided from other sources.

- This finding, supported by evidence that research funding awards are dominated by academia, professional and business networks, raises some questions about whether there is a 'professional and academic' over-representation in UKRC's research orientation.

- The research has generated significant outputs, mainly in the form of reports, peer-reviewed articles and conference papers, research briefings as well as contributing to the development of networks. Again, these outputs, and their associated impacts, are likely to be of more benefit to the academic and research community rather than for practitioners and policy makers.


### How effective has the Centre been in delivering government policy on the role of women in STEM?

- If UKRC's work is regarded in terms of the outcomes and impacts associated with specific activities, products and services within each of the nine 'core tasks' that constitute its work programme, then there are a number of areas where the evidence suggests it is making an effective contribution to supporting government policy. The areas where the evidence suggests that UKRC's work is likely to make a significant contribution to policy and practice objectives for women in SET include: recognising and rewarding good employers (through for example the Athena Swan Charter); disseminating and sharing information – particularly the Centre's online Content Repository, which provides an extensive and valuable resource base for users and a platform for collaborative knowledge creation and knowledge sharing; collation and dissemination of UK gender statistics; pump priming innovation and disbursement of travel bursaries; supporting SET women returners - a key element of UKRC's remit and holistic model for change that has consistently achieved or exceeded its targets, particularly with the Returners campaign; the returners' course, the Positive Outcomes initiative and the MentorSet programme.

- However, the evidence is less persuasive if UKRC's work is considered in a 'holistic' or 'joined up' context. In some respects, the Centre sends out signals that it lacks a clear, unitary identity – for example the website contributes to projecting an image of an organisation that is fragmented and lacking in cohesion. In other respects, for example the under-representation of 'grass roots' networks, there is evidence that the Centre's work has yet to break

down some key sectoral silos that militate against the implementation of an integrated policy approach to promoting women in SET.

- Thirdly, the evidence suggests that the voice of policy-makers themselves is not adequately represented in the work UKRC do. The effectiveness of engagement with the policy-making process remains unclear, and little investment is made in supporting 'advocacy' type actions that could more directly take the issues to the heart of the political and policy-making process.

***What impact has the Centre had on increasing the representation of women in SET careers, and in what ways?***

- Supporting SET women returners is a key element of UKRC's remit and holistic model for change. A number of constituent elements of this work are likely to make a positive contribution to addressing current skills gaps in the UK SET economy. In its various forms the Returners campaign has benefited over 1,300 women, exceeding its target by 300. Particular successes have been the returners' courses run by the Open University which has engaged 675 participants (making a potentially significant contribution to expanding the estimated total of 7,700 women currently engaged in SET occupations in UK higher education institutions); the Positive Outcomes initiative (exceeding its target of 300 by 47 participants), and the MentorSet programme (almost doubling its target of 100 participants). According to UKRC data, 413 women who have participated in their programmes report 'positive outcomes' – typically leading to further study, increased skills or finding a job.

- There is clear evidence, both from women participants and UKRC's wider stakeholder community, that the Centre's activities have had an impact on individual women.  However, it is proving at present difficult if not impossible to come to any conclusive statement as to the impact of the organisation's activities on the participation of women in SET careers more generally.

- The main impacts identified by the evaluation for individual women encompass three areas: impacts on careers -  for example through enhanceing skills in relation to work getting; providing opportunities to update sector specific skills and knowledge; impacts on  personal development – for example by enhancing 'soft' and transferable skills and developing self-confidence; impacts on work-life balance – for example enabling women to communicate more effectively and express their needs and choices with employers. Activities which provided women with a chance to access peer support and share and listen to experiences similar or related to their own were particularly valued.

- It was not possible for this evaluation to make an authoritative judgement on the societal and long term impacts on the representation of women in SET occupations associated with the Centre's work. This entails a very long-term change process and the rate of change in the UK is extremely slow, despite the past efforts of many different organisations over a significant time span. Against this background, it is too early to say whether UKRC has had a significant impact, given it has only been operational for three years. A systematic longitudinal study over a significant time period would be required to provide evidence to assess UKRC's 'global' impact.

***What level of uptake and utilisation has the Centre achieved in its key activities and what kinds of users have been engaged with?***

- The evaluation indicates that the UKRC website is consistently utilised, receiving significantly high levels of monthly traffic (average 4647 unique visitors[74]) between November 2007 and February 2008. The biggest utilisation rates are for news and events information; resources (e.g. SET Directory; Publications catalogue); research and statistics information. The 'Athena Swan Charter for Women in Science' also gained a consistently high scoring page view across all months.

- The majority of users rated the site as good to very good in terms of meeting their requirements, and the majority of users reported that they would be very likely to, or would definitely, use the site again. The evaluation identified a number of areas for improvement of the website, including: modifications to the aesthetics and layout of the website; provision of additional information and new resources (e.g. local / regional information about job opportunities for women in STEM; scholarship and fellowship information and a young persons section which has careers information); extending existing resources (e.g. updates about the successes of women); ensuring that all key information on the site can be equally easily recovered; for example by giving clear prominence to 'vital' and 'high priority' functionalities; reducing menu options throughout the site; reducing the range of domain names associated with, and carrying, the branding for the UK Resource Centre.

- Levels of uptake and utilisation of other UKRC products and services has varied across the different core tasks and activities. The outstanding success has been services for women returners. With only few exceptions, the targets that the organisation set itself in this core task were either achieved or exceeded. Uptake of the following services has been particularly successful: the T160/161 course (12 per cent more participants than aimed for), the Return Campaign (37 per cent more uptake) and the work with MentorSet (71 per cent more participants than planned).

- Activities that were less successful than anticipated were the Year in Industry and the employer matching services. The organisation recognises that both of these services had presented challenges and has acted on the lessons learnt. In the case of the Year in Industry collaboration, for instance, what started off as a good match on paper (Year in Industry also has regional structure and links to employers) stumbled as a result of the two organisations serving different target groups. Work with Year in Industry was therefore discontinued and the service taken in-house as part of the integrated returners' work.

- The GETSET Women database proved to be a very popular service, scoring very high across both registration, search, add and edit your profile pages; especially in the month of January 2008. It has seen a consistent incremental increase in the number of women registered between February 2007 to January 2008. However, the percentage of 'live' members has consistently run below 50%, and enquiries from media organisations for information have been minimal. This suggests that the database is not fulfilling its potential.

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[74] This is a standard (but not sole) method for indicating the utilisation levels. The unique visitor is any number of visits from the same remote computer. This offers an insight into how many users are visiting rather than repeat visits from the same internet IP address.

- The promotional, profiling and awareness-raising work shows mixed results. Much of this work is difficult to evaluate in terms of outcomes and impacts and the value added of activities like the 'Progress' Newsletter and 'Spark' magazine, publicity and public relations; 'the annual 'Photographic Exhibition'; media discourses and media training; poster campaigns – is unclear. However, the symbolic value of this type of work should not be under-estimated. For example, the Photographic Exhibition targets high profile people and key opinion formers, and takes the discourses around gender inequalities to the heart of male-dominated and iconic scientific symbols like the Royal Society.

### What impact has the Centre had on promoting 'culture change' in working environments that support retention; returning and skills updating?

- Although employers were unable to state that engagement with UKRC had made a difference to the number of women in their workforce, they did report the engagement having had a positive impact on their culture. Employers reported that they had gained a much better understanding of how to manage issues around women returners, for example over maternity leave and induction policy.

- Another set of themes that emerged is an increased awareness around issues of diversity, for example understanding the business case for it or understanding better areas where the business is doing well on 'diversity' and those where it is doing less well.

- In the assessment of the wider stakeholder community, the evaluation suggests overall a positive assessment of UKRC's impact on changing cultures with SET employers. On the one hand, there is a perception that UKRC is setting up a sound generic framework for culture change. Other stakeholders felt that though specific UKRC products, like Athena Swan, were having a positive impact, the overall impact of UKRC's work is difficult – and it is too early - to assess.

- The evaluation identified an unmet need amongst UKRC's stakeholder community for a more robust evidence base on impact. If UKRC wants to continue to capitalise on the goodwill it receives from key organisations and do a real service to the SET community an ongoing learning focused evaluation of its activities based on a theory of change model should be used and emerging results disseminated widely on an ongoing basis. In turn, our evidence also suggests that there is more need to communicate successes and benefits. This will support the organisation's task by helping to build a critical momentum and creating a 'buzz' in the community about UKRC's work.

### Does the Centre represent value for money (in terms of costs and benefits; leveraging of funding and developing sustainable partnerships)?

- Since the Centre's launch in 2004, just over £5.1 million of 'core' funding from DTI/DIUS has been spent on the nine 'key tasks', according to UKRC data, together with an additional £250,000 of 'third party' funds. About a third of this

covers 'administrative' costs (running the UKRC infrastructure). Although there are few benchmarks to make comparisons (though a comparison with the US 'AWIS' initiative showed that this organisation spends only 15% on administration costs), UKRC may wish to review whether the balance between 'administrative' and 'programme' expenditure is a reasonable one.

- The largest concentrations of UKRC investment in resources that are not related to running the UKRC infrastructure have been in the women returners activities, dissemination work and sharing good employment practices. The assessment of the 'women returners' outputs and associated outcomes tends to support the view that this element of UKRC's work is delivering effective, 'value for money' returns.

- The picture is less convincing in the other 'high spending' work strands, and UKRC may therefore wish to review in more detail the value, outcomes and effectiveness of activities like the 'Progress' Newsletter; the information enquiry service and the publications and documents repository; UKRC's publicity and PR strategy; the GetSET database and media and media training events.

### How effective has UKRC been in co-ordinating efforts in promoting STEM for women?

- A number of stakeholders reported that UKRC has had an impact on bringing together women in SET organisations. From the responses stakeholders were providing, the events (conferences and other events) emerge as the key lever for UKRC to bring women in SET organisations together, providing good opportunities for networking.

- However, another set of stakeholders was more sceptical about UKRC's impact on bringing women in SET organisations together. As outlined above, there is a view that UKRC's co-ordination role is weak; it has taken too long to secure and consolidate its role as a 'force for co-ordination'; it has not sufficiently established itself as an umbrella body for women in SET; its work reflects in some respects duplication of effort, and it has failed to provide leadership.

- In addition, the 'activities audit' carried out in the evaluation suggests that co-ordination work is under-resourced, representing only 1% of the investment of the work programme carried out in UKRC's nine 'core task' areas.

## 9.4.    Management of the Centre and 'fitness for purpose'

### How appropriate and effective are the management, administrative structures and processes and monitoring and quality assurance in place?

- UKRC is an organisation of some complexity. The organisation has been charged with a range of tasks but started off with just 11 delivery staff and drew on a range of sub-contractors to support its work. Its decentralised delivery structure allows it to work closely to its main beneficiaries (women returners and employers) but draws on organisations for this task that are

integrated into other structures and frequently have a separate identity of their own.

- The overall picture that emerges is of an organisation that was staffed in a relatively lean way and, though staff numbers in the centre in Bradford are set to increase to over 30 in 2008, the impression is that this at least remains the case in the hubs, especially when considering the breadth of activities covered and the style of delivery chosen. Some stakeholders interviewed as part of this study reported having felt confused about who represents UKRC. Other management issues identified were the perceived high level of staff turnover, and the large number of subcontractors used to support the delivery of UKRC services which adds a significant layer of complexity to the organisation.

- The main organisational arrangements in place to manage this complexity focus on various management, consultation and advisory groups and monitoring and steering committees including an Implementation Group (now the women in STEM expert group with members from across academia and industry), the National Advisory Group (drawn from UKRC partners, industry and the SET community), a Women and Set Group, Advisory Groups linked to the regional hubs, and other monitoring and steering groups tasked, for example, with overseeing research and pump priming awards.

- None of these groups had a clear governance remit for UKRC during 2004-2007, and it is not always clear how these various structures work together. There is also some duplication of membership across the various structures, which raises some questions about conflicts of interest. Notably, for example, members of groups with some responsibility for awards selection and monitoring are also award holders themselves. The evaluation suggests that exploring a more diverse and broader institutional and governance structure for the Centre could reap benefits. It should be noted, however, that UKRC's updating of their governance structures, which includes provision for a new Governing Body and an Industry Board, should not only put the governance of the organisation on a more solid footing but also provide opportunities for strengthening its position within the broader industrial and societal fabric.

- The key monitoring tool is the Goldmine database which includes a range of data for individuals who have been in contact with UKRC.  More than 300 items of information are stored, and this includes data ranging from contact details to services used and the contact history with the centre.  So far, this data has been primarily used to inform the progress reports to the National Advisory Group (NAG) to demonstrate progress towards achieving the organisation's key performance indicators.  Contacts with employers are monitored separately and classified by intensity of contact on a scale of 1 to 5.  The intention of using this 'progressive scale' is that in the course of engagement with UKRC, employers would move up the scale towards a greater degree of intensity.  Since the new website became live, UKRC is able to monitor hits and download figures in a much more precise way than before. UKRC also receives monthly updates on press coverage received.

- UKRC's monitoring processes do not yet fulfil their full potential as they are used primarily to demonstrate progress rather than to feed back into service or strategy development (and hence organisational learning).  Indeed, it is recognised by UKRC and in its wider governing structures that monitoring could be more effective.

- The organisation's quality assurance procedures for the services it offers include the following instruments: feedback forms given to participants of activities and at events by both the Centre and the hubs; regular surveys of women returners aimed to measure satisfaction levels with services provided and impact achieved; commissioning of evaluations of JIVE activities and the JIVE project, including the T160 course, the returner and mentoring services and the Cultural Analysis tool. In addition, gender equality trainers receive a 'rigorous induction' and are then used across the organisation

- It would appear that the feedback processes in particular could benefit from further improvement. There is a perception that monitoring and evaluation reflects a 'tick box' culture that is too focused on meeting performance targets, and gives insufficient attention to formative evaluation, reflection and learning. Furthermore, with the website becoming an ever more important resource, regular web surveys would complement current QA procedures.

- A wider issue raised by some stakeholders, which relates to the issue of quality assurance, is the impact of staff turnover at UKRC and in the hubs. There is a feeling that the loss of organisational memory due to staff turnover has not been managed as well as it might have been.

- Initially, much of UKRC's research and pump priming work was linked to the work of the JIVE project, so research awards in particular tended to be made to those academic institutions that were participating in this project (and in turn were also members of UKRC's Advisory Group and Implementation Panel). With the opening of the research and pump priming work to organisations beyond the JIVE consortium, the commissioning and selection procedures for research and pump-priming awards have been revised. The monitoring and evaluation process for awards seems appropriate, though awardees report some issues with 'over scrutiny', and time and resource constraints. The research and pump priming work so far tends to reinforce the impression that research awards tend to be dominated by the 'academic establishment'. More effort could therefore be given to encouraging more 'grass roots' applicants, and applicants from 'hard to reach' groups to come forward.

### *How appropriate and effective are the arrangements linking the regional resource centres and the 'hosting' structure provided?*

- UKRC has a federal 'hub-and spoke' structure. The organisation is 'directed' from a centre in Bradford which is responsible for the conceptual and strategic work of the organisation (such as the development of new products and the policy work). UKRC in Bradford also holds other functions for the organisation, such as information and communication services (e.g. the Goldmine database, UKRC's website, data analysis) and the development of monitoring processes. It also carries out much work with employers.

- UKRC's federated 'hub-and-spoke' model is a direct legacy of the JIVE project, the ESF EQUAL project run by the UKRC consortium between 2002 and 2007, which set up a regional infrastructure and skills base that built on experience dating back to the 1980's. This has meant that the Welsh and South East hubs as well as the hub and Centre in Yorkshire and Humber have been able to draw on a rich tradition of working on questions of women

in non-traditional areas in their particular geographic areas. For the work of these hubs within UKRC this history and structure has some clear benefits. The regional 'hubs' are based in organisations that have accumulated much expertise and strong (strategic) links in their areas. This is perhaps particularly evident in the case of the Welsh 'hub', or the Welsh Resource Centre which appears to be extraordinarily well connected, both politically and to key SET and women's organisations in the country.

- Overall our evidence base suggests that UKRC's internal arrangements for linking the hubs and the centre together are both appropriate and effective. They are appropriate because of their flexibility and the opportunities they provide for organisational learning. They are effective because they achieve a sense among hubs of being well informed and part of an organisation whilst not appearing to be overly demanding in terms of the time investment involved.

***What systems are in place to learn from activities carried out and funded and promote 'organisational learning'?***

- The 'organisational learning assessment' carried out as part of the evaluation identified a range of mechanisms in place. Mechanisms for the acquisition and creation of new knowledge for the organisation include collecting monitoring data, surveys with service users and evaluations. But, as outlined above, some methodologies require improvement to deliver optimal results. The mechanisms for internal dissemination of knowledge focus mainly on team meetings, email bulletins and informal conversations. These are valued by staff as opportunities for sharing knowledge and learning. Advisory bodies provide a link to key stakeholder communities with meetings but so far integration of this information and knowledge into the organisation is relatively under-developed. Staff and stakeholders are not universally aware of the impacts of advice and services provided.

- Overall, there are some areas that need to be improved if UKRC is to succeed in developing and implementing an 'organisational learning culture'. Much of its dissemination work appears to be done in 'transmissive' mode, operating on what might be called a 'deficit model' of information and knowledge creation and diffusion. Few mechanisms are built into the infrastructure for feedback from stakeholders, and few opportunities can be identified for collaborative learning between stakeholder groups themselves, and between them and UKRC. In addition, UKRC in its own organisational culture does not appear to devote much attention to building in space and opportunity for reflection on how its strategies and activities are working, using evidence compiled from monitoring and evaluation to apply learning to promote organisational development. The 'holistic model for change' is likely to provide a fruitful framework to guide this process.

## 9.5. Future development of the Centre

***Should the Centre continue in its current form?***

- Overall, the evaluation supports the view that UKRC occupies an important position in the 'women in SET' landscape. Its 'holistic model of change' is consistent with a prevailing view, supported by a substantial body of evidence, that the complex combination of structural, cultural, institutional and economic factors that create barriers for women in SET require a correspondingly integrated and sophisticated strategic and operational response. The work programme that UKRC has developed to deliver this 'model of change' is also broadly appropriate and 'fit for purpose'. In turn, UKRC has produced an extensive and diverse range of products and services, targeting a wide spectrum of important stakeholders in the women in SET landscape.

- The evidence also suggests that many aspects of UKRC's work are meeting stakeholder needs, are delivering positive outcomes for the Centre's users and are likely to make a significant contribution to policy and practice objectives for women in SET. Products and services such as the website and its associated repository of resources, the Centre's training courses, its mentoring programmes and its statistics service enjoy high levels of demand, are well subscribed and are highly valued. For example, the support UKRC provides for SET women returners - a key element of UKRC's remit and holistic model for change - has consistently achieved or exceeded its targets, particularly with the Returners campaign; the returners' course, the Positive Outcomes initiative and the MentorSet programme. Engagement with employers has increased organisational awareness about diversity issues and seems to be leading to strong and lasting relationships.

- In the light of this evidence, our main recommendation is that UKRC should continue to be supported, at least over the next three years and at a level of funding in line with previous years. However, the evaluation has identified a number of areas that we would suggest UKRC and DIUS need to consider in order to help the initiative move forward, and to help improve its relevance, efficiency and effectiveness. These cover the following and are elaborated in more detail below:

  ➢ the underlying 'theory of change' that supports UKRC's mission and its 'holistic model of change';

  ➢ the Centre's governance and management procedures, particularly its linkages with stakeholder groups and its relationship with networks that currently appear to be under-represented;

  ➢ the configuration and balance of the nine 'core tasks' that shape UKRC's strategic plan and through which the 'holistic model' is operationalised, including the relative levels of resources that are allocated to each;

  ➢ UKRC's monitoring and evaluation systems, particularly the ways in which evaluation results are applied to 'organisational learning';

  ➢ the ways in which UKRC presents its identity, particularly with regard to the design and deployment of the website.

***What changes to the Centre's mission, purposes, objectives and delivery
model would improve its relevance and effectiveness?***

- The 'holistic model of change' reflects the need to address the entrenched
  and structural conditions and processes that create barriers for women in
  SET,  though its underlying logic does not remain uncontested, particularly
  with regard to the 'positive action' rationale that shapes the Centre's mission
  and values. Open questions remain about how individual elements of this
  model fit together, and interact with each other, to bring about change.  For
  the operationalisation of the model, therefore, UKRC and DIUS could learn
  from alternative models that are currently being implemented.  The German
  'Kompetenzzentrum', for example, situates gender equality in a 'social capital'
  framework which, together with its mode of implementation, grounds it in the
  economic realities of the knowledge society.  In practical terms, we would
  recommend an early review, to include DIUS, UKRC staff, representatives of
  its governance structures, and key stakeholders, of the operationalisation of
  the Centre's 'theory of change' model.  As part of this review, UKRC could
  usefully reflect on ways of better including and utilising the results of the work
  and 'tacit' knowledge created by grass roots organisations, in order to
  balance its current over-reliance on 'academic' knowledge.

- Although the 'hub and spoke' delivery approach has been working well, and
  provides the degree of flexibility required for UKRC to operate in a
  fragmented and crowded landscape, UKRC itself appears fragmented and
  lacking in a strong identity. This image is reinforced firstly by the dominant
  role played by sub-contractors in service delivery, and secondly by the under-
  representation of some key stakeholder groups – notably community-based
  and grass roots networks. UKRC has generated substantial good will, and
  admiration, as a result of the work it has carried out over the last three years,
  which it needs to capitalize on. To do this requires a shift from a 'sub-
  contracting' delivery model to a more 'co-facilitative' model. This in turn
  requires a change in its mission, which currently emphasizes 'drawing on' the
  work of other stakeholders, to one that focuses on collaborative knowledge
  networking. In practical terms, a review of its networking strategies is
  desirable, and UKRC could benefit from learning from the strategies adopted
  by the US 'Association of Women in Science', which successfully capitalises
  on the input of local 'chapters' and volunteers, and the work of the German
  'Kompetenzzentrum' initiative, which is strongly embedded in local
  community-based networks.

- UKRC at present does not appear to be adequately fulfilling its purpose as a
  'co-ordination force' to reduce the current fragmentation and lack of
  coherence of the range of groups working in the women in the SET field. To
  achieve this, UKRC would need to establish a stronger 'leadership voice' in
  the domain. This voice on the one hand would emerge through implementing
  the kinds of changes to its governance and networking strategies outlined
  above. In practical terms, UKRC could benefit from making some changes to
  how it presents its image and identity to stakeholders and the outside world,
  notably by making changes to the website, as outlined in Annex 1 to this
  Report.

***What changes to the Centre's operational, management and administrative systems and procedures would improve its efficiency and effectiveness?***

- The evidence suggests that the holistic model of change adopted by the Centre, and by DIUS, is very ambitious in terms of UKRC's current resource base. A review of the model of change itself, as proposed above, will shed further light on resource issues.

- In turn, although there are few benchmarks against which comparisons can be made, the Centre could benefit from reviewing whether the current two thirds - one third balance of expenditure between programme delivery and administration could be changed. This review should include an assessment of the relevance and value added of the subcontracting delivery model currently being used.

- As part of this review, an assessment of the current configuration and resource expenditure associated with the nine 'core tasks' should be undertaken. In particular, UKRC should review the cost-effectiveness of activities like the 'Progress' Newsletter; the information enquiry service and the library;  the publicity and PR strategy; the GetSET database and media and media training events.

- Reviewing the current strategy for action, and the current work programme, raises questions that need to be addressed over the monitoring, evaluation and quality assurance systems and processes currently adopted. The evaluation has highlighted the need for a more robust, 'evidence-based' evaluation culture, one that links the collection of data on 'what works, for whom under what circumstances' to support reflection and learning. As a central focus for engaging with stakeholders and the external world, the website could be more profitably used as a platform for evaluation and review, as part of the website functionality review recommended in Annex 1 of this report.

- As part of the review of monitoring, evaluation and quality assurance, UKRC should pay attention to how the structures and procedures currently in place and those in the process of being developed support organisational learning.

- The evaluation has in addition suggested that in tandem with developing a more effective evaluation culture, UKRC needs to put into place the systems and processes necessary to promote more effective 'organisational learning'. This needs to: place less emphasis on meeting performance targets; put more emphasis on creating spaces for critical review and reflection within the organisation and developing a collaborative learning culture with stakeholders and 'grass roots'.

***What has been learned from the experiences of the Centre that can be applied to design and implement more effective similar initiatives in the future?***

UKRC is a bold and complex innovation. It is too early to draw definitive conclusions about 'what works' and what is transferable to similar and future initiatives. However, the results of this evaluation suggest that more research is needed on key 'design issues' that future initiatives would need to focus on. These include:

- Work on 'gender equality models in SET' – particularly 'empowerment models' - and how these can be linked to prevailing social, cultural and economic conditions;

- Developing 'theory of change' approaches;

- Work on engaging informal 'communities of practice' and community-based networks in policies and initiatives to support women in SET;

- Assessing the efficacy and effectiveness of different delivery models;

- Cost-effectiveness analysis of different clusters of actions and activities, particularly the cost-effectiveness of activities that focus on 'intangibles', such as awareness-raising and profile raising;

- The potential role of 'Web 2.0' and social networking technologies in delivering policy and actions on women in SET.

# ANNEX 1: SUGGESTIONS FOR WEBSITE FUNCTIONALITY AND CAPABILITY

Concordant with the objectives and responsibilities of the UKRC as an organisation, the UKRC website offers a range of user interactive and searchable services, downloadable resources and information including: the GetSET Women database, Publications Catalogue, Research and Statistics, UKRC Publications, Best Practice Case Studies for Employers and SET Directory. A number of these services and resources share a common, easy-to-use search interface.

However, to improve website utilisation, audience interest and enhance first-time and return user experience, we suggest augmenting existing services and adding a selection of new services to the site:

### RSS Web Feeds

A now common site service which not only provides updates on content as it dynamically changes (e.g. news and announcements), but which also has the benefit of consistently engaging the user with the site over time are RSS (Really Simple Syndication) web feeds. We recommend that the UKRC considers employing RSS feed subscription for its website and uses the service to strategically attract different target audiences (e.g. Employers, Women Returners, Women and Girls) to areas of content on the website.

### Multimedia: Employing Streaming Video and Audio

Whilst there is a single video asset already on the site some of the other services on the site could also be enhanced by the use of multimedia. For example, the website could offer a brief 'video diaries' of successful women from a range of backgrounds, women offering keynote interviews concerning returning to work or how they achieved success working with the UKRC, and SET employers discussing how they have worked with the UKRC. A 'news and events' page could also showcase or highlight changing and relevant video material. Furthermore, these interviews could also be cross-referenced to the GetSET database, personal stories, employer case studies and RSS feeds. The use of video or streaming audio narrative has the potential to effectively augment existing services and enhance the sense of engagement, interest and reality for the user.

### Moderated Fora

The use of registered, interactive forums for is a common vehicle for engaging users in the long term as well as providing users with the opportunity to support, informally contact and discuss with each other, key issues of interest and relevance. On the UKRC website, a moderated or supervised forum could be thematically linked to key events or issues e.g. 'The Select Committee Inquiry on Engineering'. The use of fora could also provide intelligence to the organisation concerning the most topical and popular issues for different user audiences.

**FAQs and Ask an Expert Service**

Given the potentially extensive expert knowledge base within the UKRC and its network, the website could offer a browsable and searchable Frequently Asked Questions (FAQ) database. This service could support the existing 'information service' by collating, re-presenting and organising a selected range of most popular, relevant and salient cross-referenced information, tailored to specific target audiences.

Whilst there is already an Enquiry/Contact Us form the FAQ section could also offer the user the opportunity to address a specialist in the UKRC concerning specific matters. This service could further enhance the experience of engagement with the website and the organisation itself.

**Publications Catalogue**

Currently, the website embeds a publications catalogue which offers a searchable index of resources "available for research, promotion and general interest on the issues of girls and women in SET" (@http://www.ukrc4setwomen.org.uk/html/resources/publications-catalogue/). In order to dynamically attract user interest and provide a prime for further utilization of this facility, the 'top ten downloaded articles' could be presented for different audiences as well as a UKRC selection and synopsis of the 'best of' for different audiences.

# ANNEX 2: COMMENTS ON UKRC BY PARTICIPANTS

Survey respondents were invited to provide any additional comments about their experience or perspective on UKRC. For the main part comments made here reflected the content of answers given elsewhere. Respondents used this question to provide both praise for and criticism of UKRC services. A sample of comments is outlined below:

| Q16. Are there any other comments you would like to make about your experience of UKRC? |
| --- |
| *"Finding out about UKRC came at a time when I felt very isolated and somewhat trapped in an unhappy work environment. It was a life-saver and I am very grateful to everyone who has been so supportive, informative and encouraging.* [WS 3] |
| *"It has been a most positive experience at the right time in my life. I am immensely grateful to UKRC and hope that they continue in their support to myself and others for a good while to come."* [WS 11] |
| *"Very valuable scheme, helped me find a path back into my career"* [WS 14] |
| *"Nice group of people - but the whole thing doesn't really seem to be coherent - more like that there are a few people here, then there are a few people there … I am missing the feeling of a unified approach"* [WS 24] |
| *"It would appear that employers are paying lip-service to the initiative and do not appear to be willing to deliver the expected outcomes"* [WS 33] |
| *"Probably life changing. Without the T160 course, I would never have done any other OU courses, and I am now planning a PhD".* [WS 44] |
| *"After many years bringing up a family I believed that it would be very difficult to return to a SET career. The T160 course and other support from UKRC changed that."* [WS 88] |
| *"UKRC does not address the real problem that men keep research jobs for themselves, their friends and favourites. UKRC should provide an alternative route to fund full time older women returner researchers and let them that way to grow to become significant actors in their fields."* [WS 106] |
| *"I do worry that it preaches to the converted and think it should reach out to the wider world more"* [WS 116] |
| *"Again the issue of publicity… is this the same as RCUK for example ..I am uncertain about this although I am heavily involved in SET"* [WS 147] |
| "*After the T160 course there did not seem to be a strategy for what should happen next and it was difficult to get any further assistance*" [WS 206] |
| *"Incredibly valuable resource, seems to me to be having measurable and tangible impact, and much valued"* [WS 211] |
| *"Before being involved with the UKRC I had spent 18 months solidly trying to find employment in the SET environment without success. My overall experience with the UKRC in the past nine months has been a positive one"* [WS 228] |

# ANNEX 3: CURRENT ORGANISATIONAL CHART OF UKRC IN BRADFORD

UKRC

**Director**
Annette Williams

**Project Officer**
Ruth Griffiths
(Rachel Warboys)

**AD Bus & Serv Develop**
Ros Wall
Liz Fahy

- Inn & Reg Dev Man
Helen Collier
- Project Dev Man
Claire Pickerden
- Fundraiser
- Cont / Grants Coord
Naheed Rehman
- Project Officer
Louise Koch-Osborne

**AD Services for Women**
Jane Butcher

- Man Ops & Delivery
Rachel Tobbell
- S4W Coord Ment & Dev
Jacki Mason
- S4W Coord Res & Ptn
Kaye Heyes
- S4W Coord Car & Emp
- S4W Coord Regional
Tamsin Spain
- Project Officer
Samantha Haynes
- S4W Coord Networks

**Head of Serv for Bus & Orgs**

- Awards Coordinator
Sharon Brown
- E.L. Coord Influence
Tracie Fenton
- E.L. Coord Industry
Claire Wilson
- E.L. Coord Regional
Gill Rooker
- GP & CA Researcher
Julia Jordan
- Admin
Isma Batool
Jilie Briggs

**Head of Res, Pol & Data**
Marion Scott

- Res & Data Coord
Anna Zalevski
- Res & Info Assistant
Leigh Ingham
- Social Stats Analyst
Takao Murayama
- Policy Advisor
Marion Scott

**Head of Comms & PR**

- Events Coord
Sima Alavi
- Marketing & Comms
Jack Hunt
- Web & Info Coord
Erica Williams
- Info Officer
Gillie Lawrence
- Marketing Assistant
Malwina Karbarczyk

**Finance Manager**
Alastair Brown

- Finance Officer
Laura Birch
- Finance Officer
Vicky Hudson
- Finance Assistant
Val Altayrac-Sullivan