

FGDS Ltd

# EOWDC

An Evaluation process on Research Themes

**EOWDC**

# **Evaluation of Research Themes**

**Prepared by Frank Grant, FGDS Ltd**

**June 2016**

## **Contents**

<b>Executive Summary</b>	<b>4</b>
<b>1. Introduction</b>	<b>6</b>
<b>2. Context &amp; Process</b>	<b>6</b>
<b>3. The Evaluative Framework</b>	<b>7</b>
<b>4. Evaluation Criteria</b>	<b>7</b>
<b>5. The Themes</b>	<b>9</b>
<b>6. Scoring the Themes</b>	<b>9</b>
<b>7. Weighting of the Criteria</b>	<b>10</b>
<b>8. Output of Scoring the Themes</b>	<b>11</b>
<b>9. Appendices</b>	<b>14</b>

## **Executive Summary**

This document records the process and outcome of considering the priorities for Research Themes within the EOWDC project.

The process was undertaken at an independently facilitated workshop with a representative stakeholder group on the 3<sup>rd</sup> June 2016 at Marine Scotland offices in Aberdeen.

The process used Multi Criteria Decision Analysis (MCDA) techniques to facilitate the engagement of participants in identifying the Research Themes priorities. An external consultant, widely experienced in these techniques, used this approach and methodology to facilitate the group to come to a view on the priorities they would expect to be included in associated work on the EOWDC project.

The objective for the workshop was set as:

- To establish a list of priorities amongst the Research Themes being considered by the group using a structured evaluation process.

The workshop would not consider specific research projects but rather then generic Themes within which projects will be called for in due course.

The Research Themes considered were:

- Research Themes related to Birds
- Research Themes related to Mammals
- Research Themes related to Fish
- Research Themes related to Socio Economic issues
- Research Themes related to Coastal Processes
- Research Themes related to Colonisation
- Research Themes related to Benthos
- Research Themes related to Water Quality

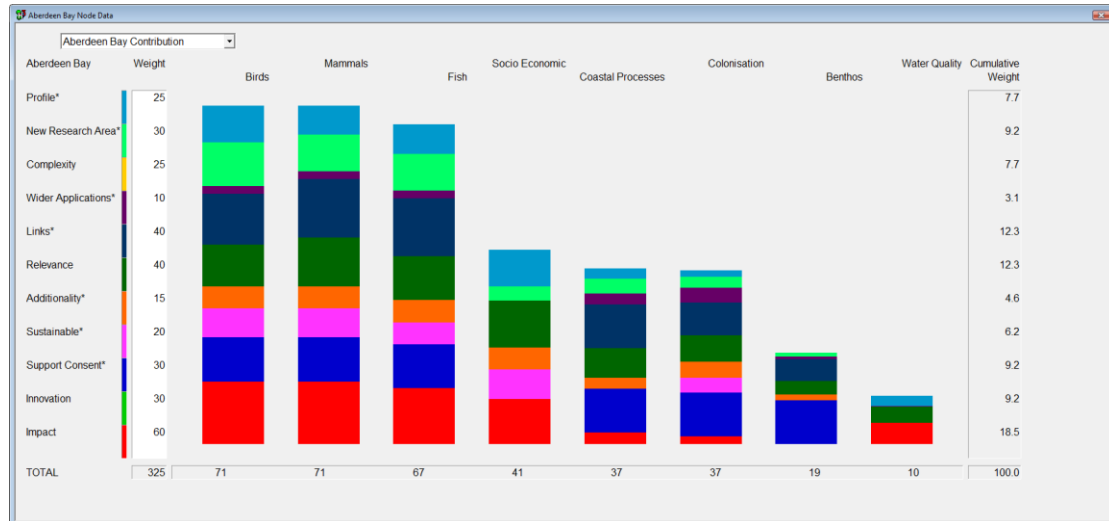
The group had met previously in Aberdeen on 17<sup>th</sup> March 2016, to establish the framework of evaluative criteria and their definitions and used this framework to consider the relative merits of each of the Themes against the criteria being considered.

A brief explanation was given of the scoring process to be used in this technique and the importance of the relative position of Themes rather than the specific numeracy attached to each of the Themes. The facilitator then advised the group that when the scoring was complete, they would be invited to agree the weightings for each of the criteria and using a piece of software the computation would be undertaken and reflect back to the group their weighted scores for each of the Themes.

Some sensitivity analysis can be undertaken post this evaluation to test the robustness of the outcome if the group so wish. In this instance this was not considered necessary as the outcome reflected the group's view of the research themes and their hierarchy as established through this process.

## **Prioritised Themes**

The result of the group's work is illustrated in Figure 1 over.



**Figure 1**

The outcome from the process clearly demonstrated that Research themes related to Birds, Mammals and Fish are the dominant Themes with Socio economic, Coastal Processes and Colonisation in the next grouping.

The group considered that the output reflected their evaluation and were content not to undertake any further sensitivity analysis of the outcome.

The following document Sections record the detail of the work undertaken at the workshop event.

## 1.0 Introduction

The following paper describes the process of evaluation of Research Themes associated with the EOWDC project.

The process was undertaken in the offices of Marine Scotland in Aberdeen on the 3<sup>rd</sup> June 2016. The evaluation used a structured approach in a workshop setting to consider the various Research Themes. The scoring and evaluation was done by representatives of a wide ranging stakeholder group.

The attendees were:

Ian Davies	MS (Chair)
Roger May	MS LOT
Catarina Aires	MS
Helen Jameson	AOWFL
Jesper Kyed Larsen	AOWFL
Fiona Read	WDC
Erica Knott	SNH
Ian Francis	RSPB
Alexander Downie	SEPA
Jessica Drew	MS
Morag McCorkindale	AREG
Douglas Watson	TCE

The session was structured and facilitated by Frank Grant of FGDS Ltd.

This meeting was the second stage in the process to identify Research Themes as this group had met previously, in the same venue, to establish how they would make their choices by establishing an evaluative framework for this purpose.

The outcome of this group's work is the subject of this paper.

## 2.0 The Context & Process

As part of the EOWDC project monies have been identified for undertaking appropriate and useful research for such a development. To identify priorities for the allocation of these monies a structured and transparent approach to undertake the evaluation with third party facilitators—FGDS Ltd – has been applied.

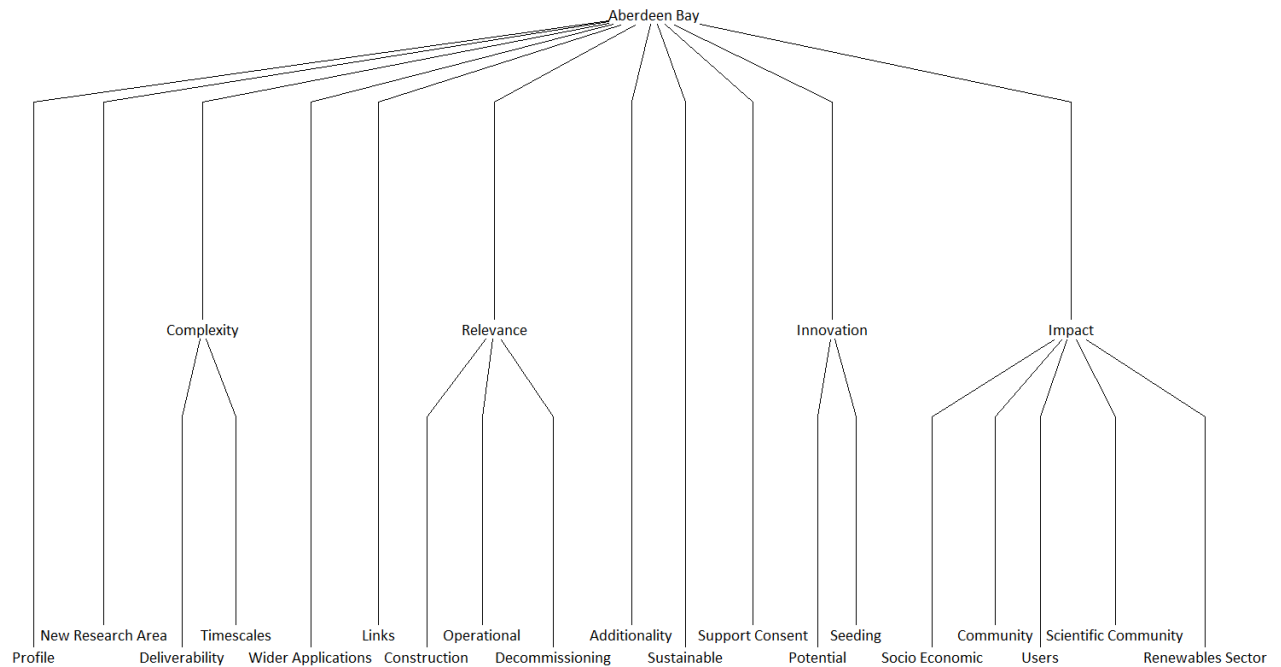
The outcome of this initial work is to identify those Research Themes that are predominant, as judged by a wide ranging stakeholder group, and which will form the basis of the calls for proposals in their respective fields.

The process applied has been done in two stages. The first stage was a process of '*deciding how to decide*' by setting aside the Research Themes in the first instance and focussing on establishing a framework of criteria to judge the respective Themes. This fundamental approach is further refined in this process by the use of a technique called Value Focussed Thinking – where the basic tenet is that, regardless of the choices to be considered, the evaluation criteria should be developed ahead of any scoring and weighting.. This framework was undertaken by a group of wide ranging stakeholders and forms the basis of the evaluative process to be used. This gave the participants a hierarchy of criteria with definitions of their attributes. The second stage of the process is to score the Themes and weight the criteria to establish an outcome.

**3.0 Evaluative Framework**

An evaluative framework – ‘value tree’ - was developed at the earlier meeting of the group on 17<sup>th</sup> March 2016 and structured to facilitate the process of scoring and weighting the various Research Themes.

The evaluative framework is shown in Figure 2 below:



**Figure 2**

**4.0 Evaluation Criteria**

The participants at the appraisal developed a range of criteria at their earlier meeting on 17<sup>th</sup> March 2016, which were to be used in their evaluation of the Themes.

Under these collective criteria the participants defined the criteria and where appropriate the attributes within these criteria. The following Table 1 defines these attributes

Criteria	Attributes	Description
<b>Profile</b>		The research theme that contributes most to the perceived importance/value of off-shore wind to industry and the Scientific community
<b>New Research Area</b>		The Research Theme that targets an area where little or no current research effort is dedicated or which will increase current knowledge or reduce current uncertainties but relevant to the project.

**Table 1 – Decision Criteria**

Criteria	Attributes	Description
<b>Complexity</b> (The area of research that contributes most to mitigating the complexity of deliverability and timescales for THIS project.)	Deliverability	The Research Theme that is considered to be deliverable within project constraints and budget.
	Timescales	The Research Theme that is considered to be deliverable within the timescales of this project
<b>Wider Applications</b>		The degree to which there are potential applications of the Research Theme beyond offshore wind
<b>Links</b>		The degree to which a research theme has both links and relevance to the EOWDC project and can make use of data obtained by monitoring required for consent compliance
<b>Relevance</b> (A judgement as to the degree to which a Research Theme has relevance to the current project phases of construction; operations and decommissioning)	Construction	A judgement as to the degree to which a Research Theme has relevance and will increase knowledge/ decrease uncertainty for the project phase of construction.
	Operational	A judgement as to the degree to which a Research Theme has relevance and will increase knowledge/ decrease uncertainty to the project operational phase.
	Decommissioning	A judgement as to the degree to which a Research Theme has relevance and will increase knowledge/ decrease uncertainty to the project phase of decommissioning
<b>Additionality</b>		An assessment of the degree to which a Research Theme offers opportunities for additionality and leverage to additional funding on a cooperative basis
<b>Sustainability</b>		An assessment of the degree to which a Theme is sustainable and extendable beyond the funding timescales associated with the EOWDC and its dedicated environmental R&D budget
<b>Support Consent</b>		The degree to which a Research Theme will support the consent requirements of this project and which can make use of data obtained by environmental monitoring required for consent compliance.
<b>Innovation</b>	Potential	The degree to which a Theme offers the potential for innovation in terms of new techniques, technologies and/or outputs
	Seeding	The degree to which a Research Theme seeds and/or stimulates innovation to a third party

Table 1 Decision Criteria (cont.)



Criteria	Attributes	Description
Impact	Community	The degree to which a Research Theme has a positive impact on the local community in the North East of Scotland
	Scientific Community <sup>1</sup>	The degree to which a Research Theme has a positive impact on the scientific community as the custodians of knowledge
	Users	The degree to which a Research Theme has a positive impact on the community of Users, e.g. fishermen, etc., in the NE of Scotland
	Socio Economic	The degree to which a Research Theme contributes to the socio- economic benefit of the area
	Renewables sector	The degree to which a Research Theme contributes most to the renewables industry whether it is offshore wind or wider.

**Table 1 Decision Criteria (cont.)**

## 5.0 Research Themes

The group had agreed at their first workshop on the research themes to be considered.

The Research Themes considered were:

- Research Themes related to Birds
- Research Themes related to Mammals
- Research Themes related to Fish
- Research Themes related to Socio Economic issues
- Research Themes related to Coastal Processes
- Research Themes related to Colonisation
- Research Themes related to Benthos
- Research Themes related to Water Quality

## 6.0 Scoring the Themes

The group were then invited to 'score' the Themes against the criteria they had developed in the 'value tree'. The facilitator explained the scoring technique to be used in this instance as a relative scoring process. Therefore the group didn't need to be overly concerned on the number value assigned for any of the Themes against the criteria under consideration, what they were being asked to do was to make a judgment as to the relative merits of the Themes against each of the criteria in turn.

<sup>1</sup> Added post meeting by Stuart Gibb

The scoring process adopted used a scale of 0-100 where 100 is best and the group then undertook this process for each of the Themes against each of the criteria. This information was inputted to a software programme with the group present at the time and used as the medium to feedback the relative scores.

The scores attributed against each criteria are attached in the Appendix to this paper and those where the group considered that they couldn't score were also recorded. For the purposes of this exercise the Themes were all scored the same in these criteria.

## 7.0 Weighting of Criteria

Following the scoring of Themes, the participants were then asked to weight the relative importance of criteria. To facilitate this part of the work the facilitator used weightings that had been assigned independently by Professor Stuart Gibb (Chair) who was unable to attend the meeting.

The group agreed with most of the weightings but felt that the Impact criteria needed to be the most important and assigned the weightings accordingly.

These weightings are shown in Tables 2 – 6 below:

Criteria Attributes	Weighting
Profile	25
New Research Area	30
Complexity	25
Wider Applications	10
Links	40
Relevance	40
Additionality	15
Sustainability	20
Support Consent	30
Innovation	30
Impact	60

**Table 2 Main Criteria Weighting**

Criteria	Attributes	Weighting
Complexity	Deliverability	1
	Timescales	1

**Table 3 – Attributes Weighting**

Criteria	Attributes	Weighting
Relevance	Construction	40
	Operational	40
	Decommissioning	10

**Table 4 Attributes Weighting**

Criteria	Attributes	Weighting
Innovation	Potential	1
	Seeding	1

**Table 5 Attributes Weighting**

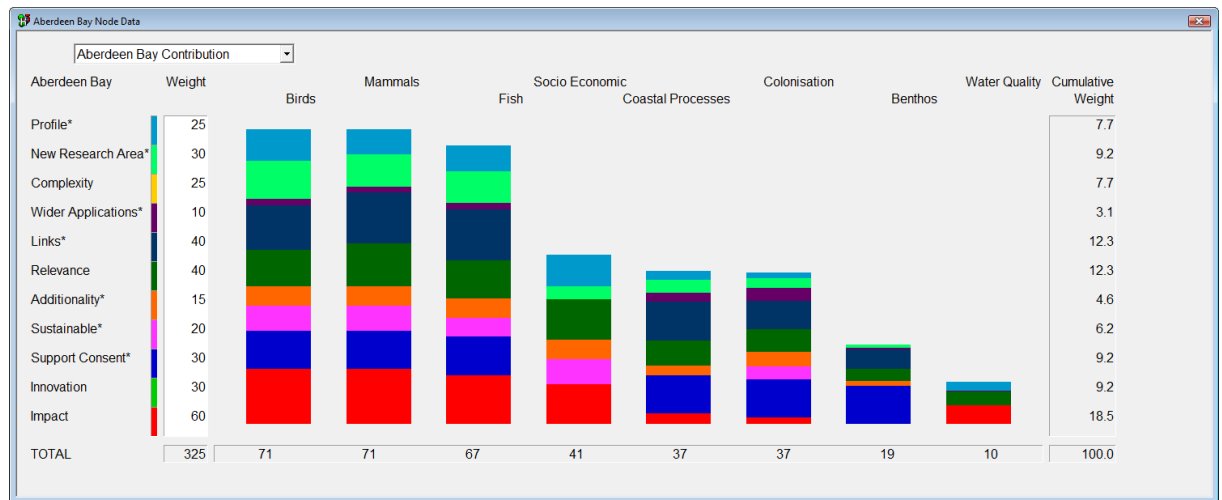
Criteria	Attributes	Weighting
Impact	Socio Economic	40
	Community	20
	Users	20
	Scientific Community	30
	Renewables Sector	70

**Table 6 Attributes Weighting**

## **8.0 Output of Scoring the Themes**

The group completed their work and the software computation used their scores and weightings to generate an output that reflected their work and identified the Research Themes that were the predominant based on this assessment.

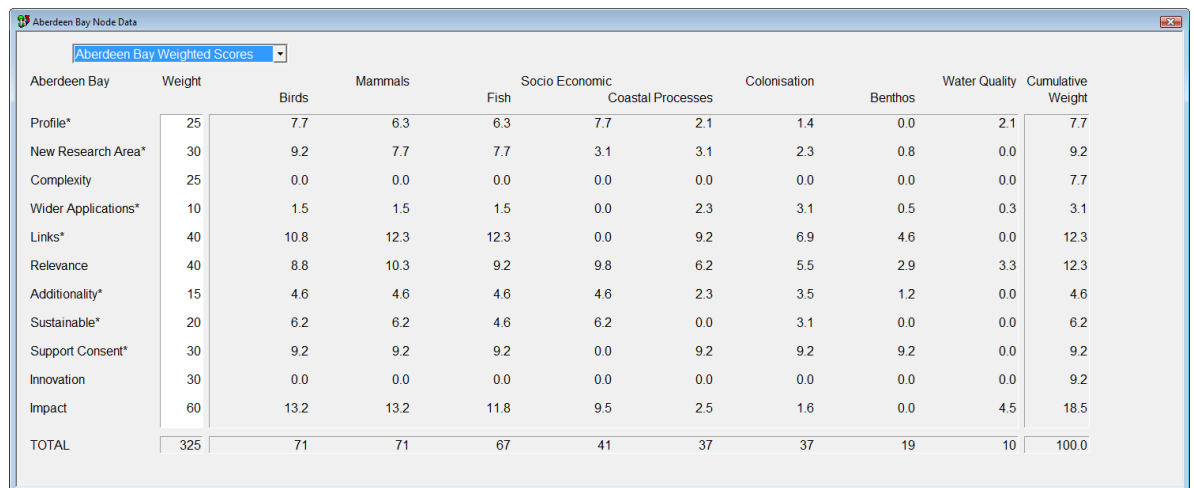
Figure 3 over illustrates the outcomes from this evaluation



**Figure 3**

This clearly shows that the dominant Research themes are Birds, Mammals and Fish and that the Socio economic, Coastal processes and Colonisation are the next most important group.

For information purposes the weighted scores are shown in Figure 4 below.

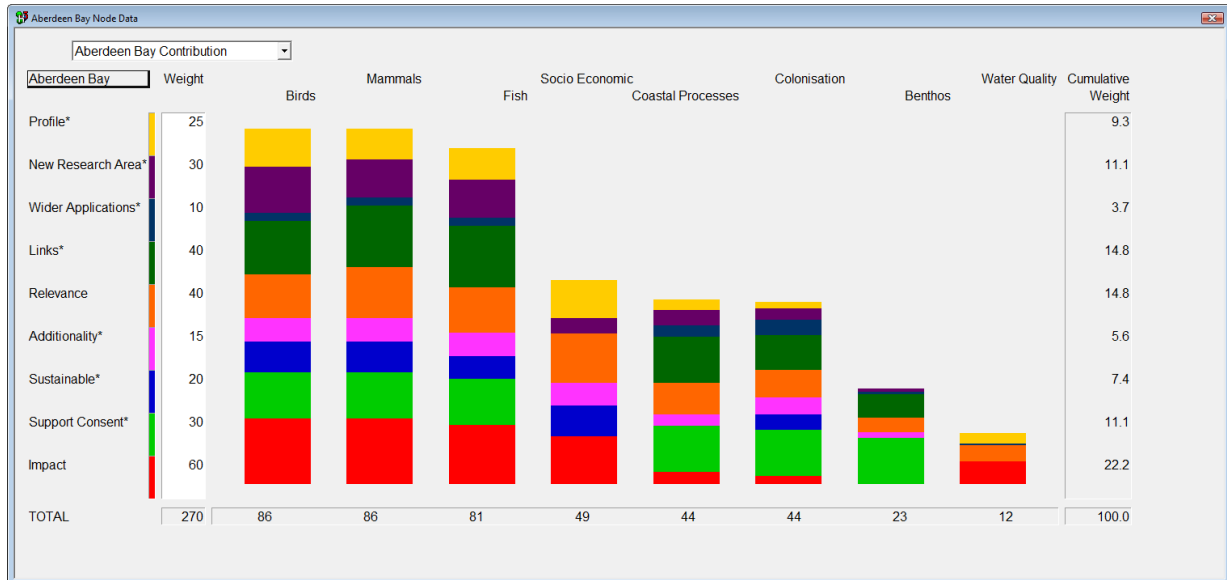


**Figure 4**

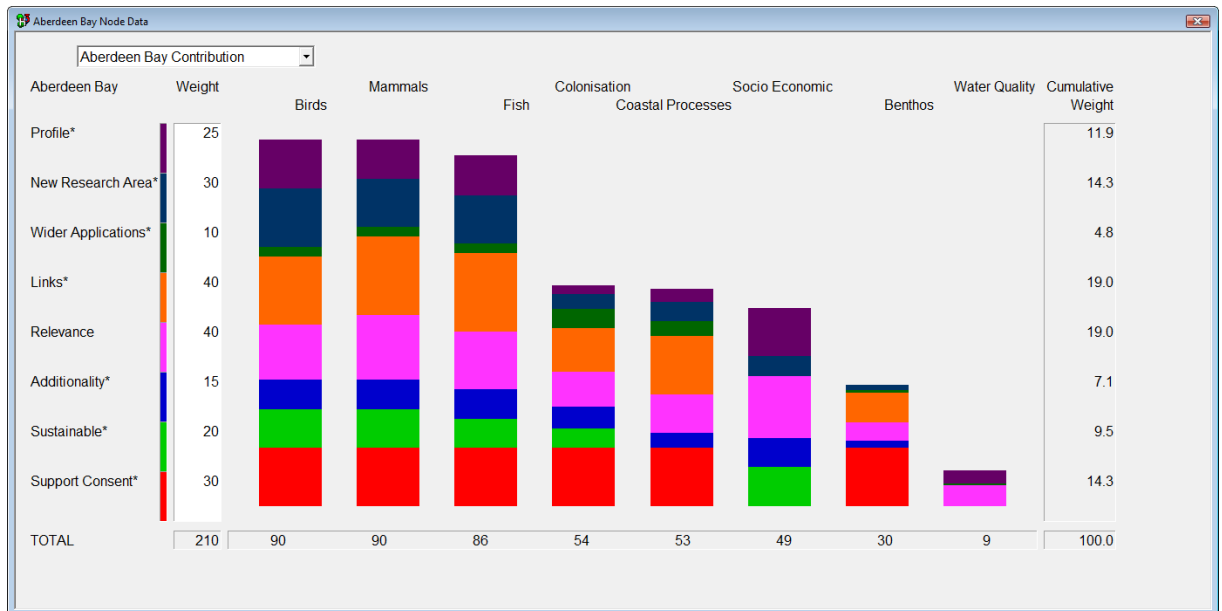
**Sensitivity Tests**

The following tests were done 'off line' as a test of the robustness of the outcome. The first test is to remove the criteria that the group felt unable to score on the day and the outcome from this is shown in Figure 5.

The second test was to omit Impacts as a criterion as this was suggested post the first meeting by the facilitator. The outcome of which is shown in figure 6.



**Figure 5**

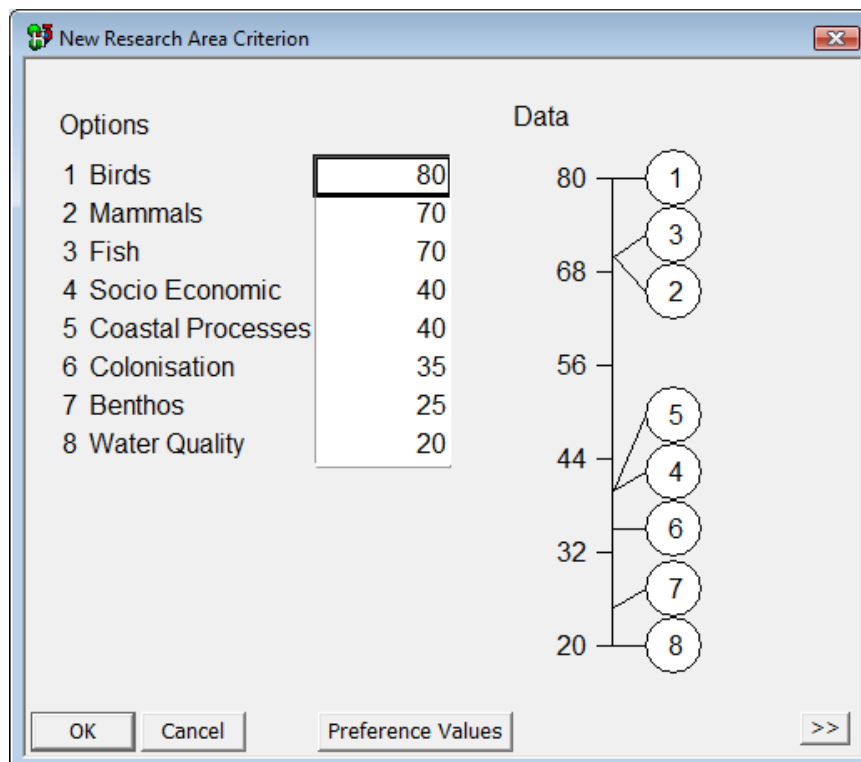
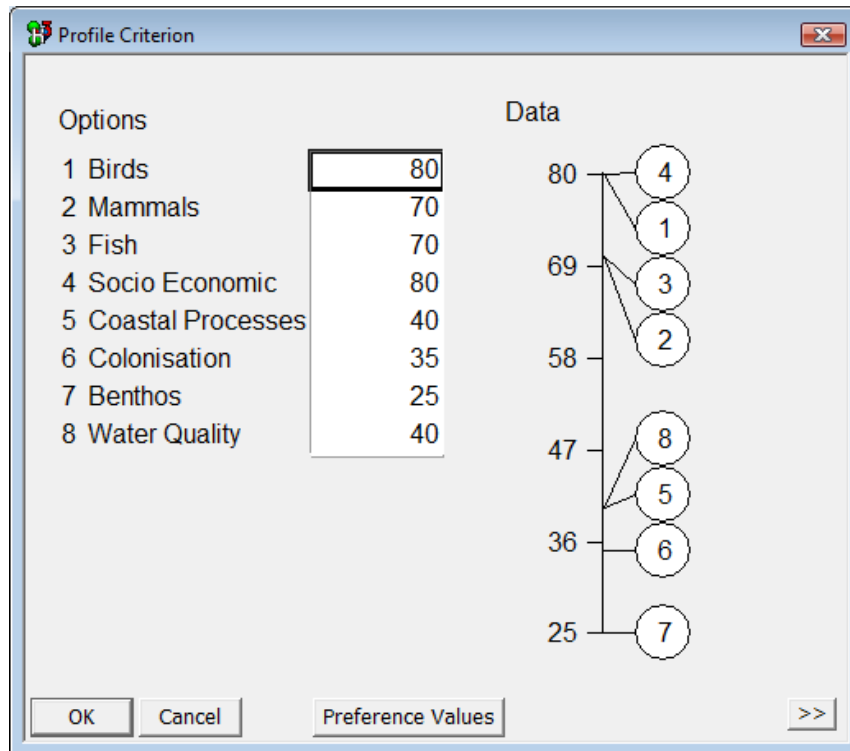


**Figure 6**

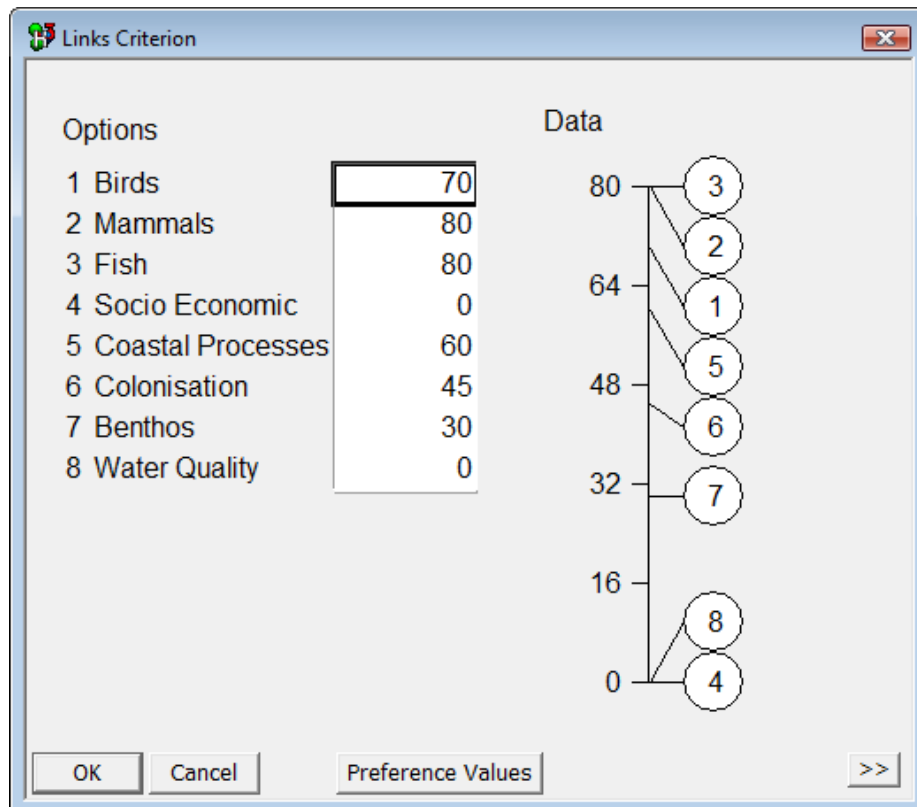
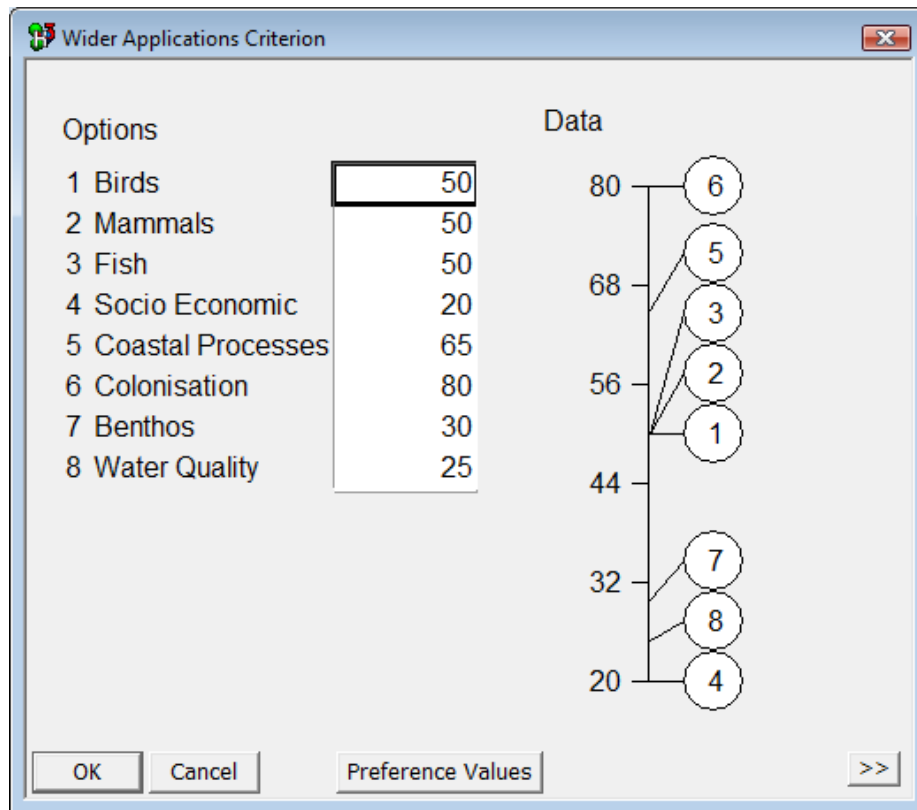
In both tests the outcomes remain robust albeit when Impacts is omitted the Socio Economic Theme moves down the order.

9.0 Appendix

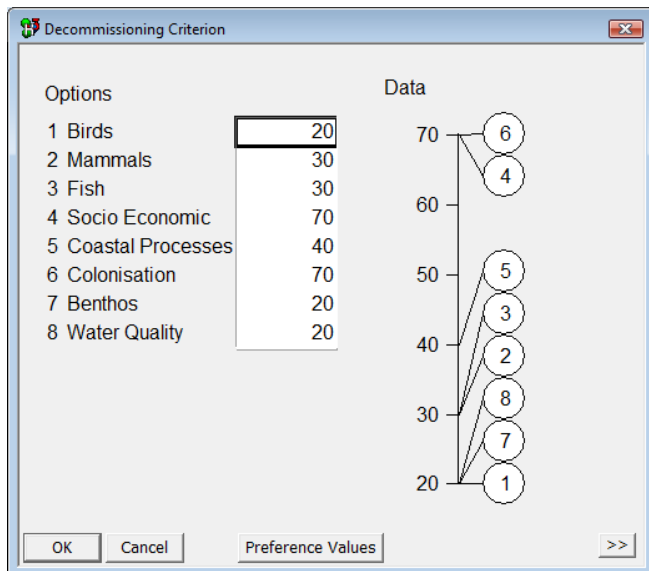
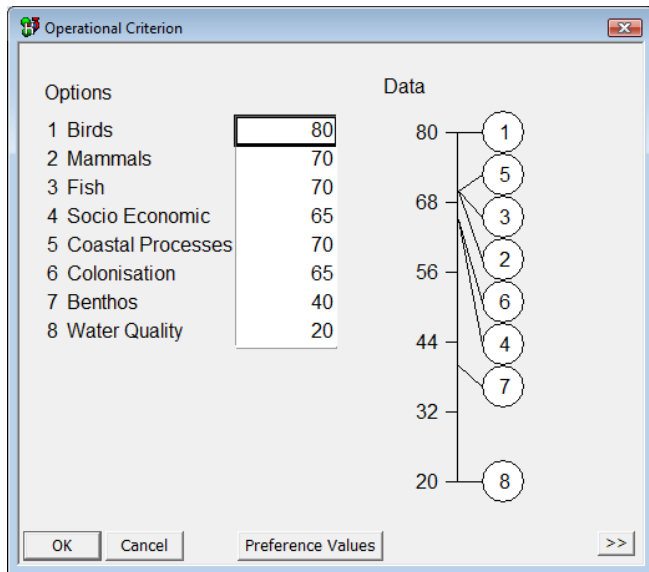
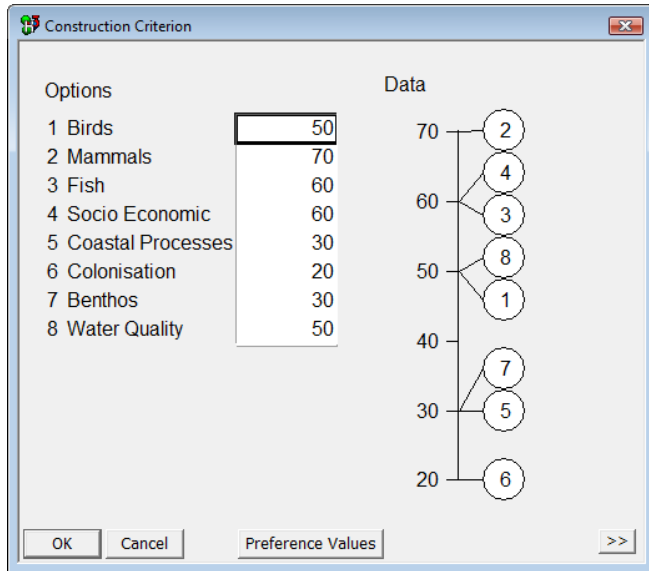
Scores attributed against each of the criteria:



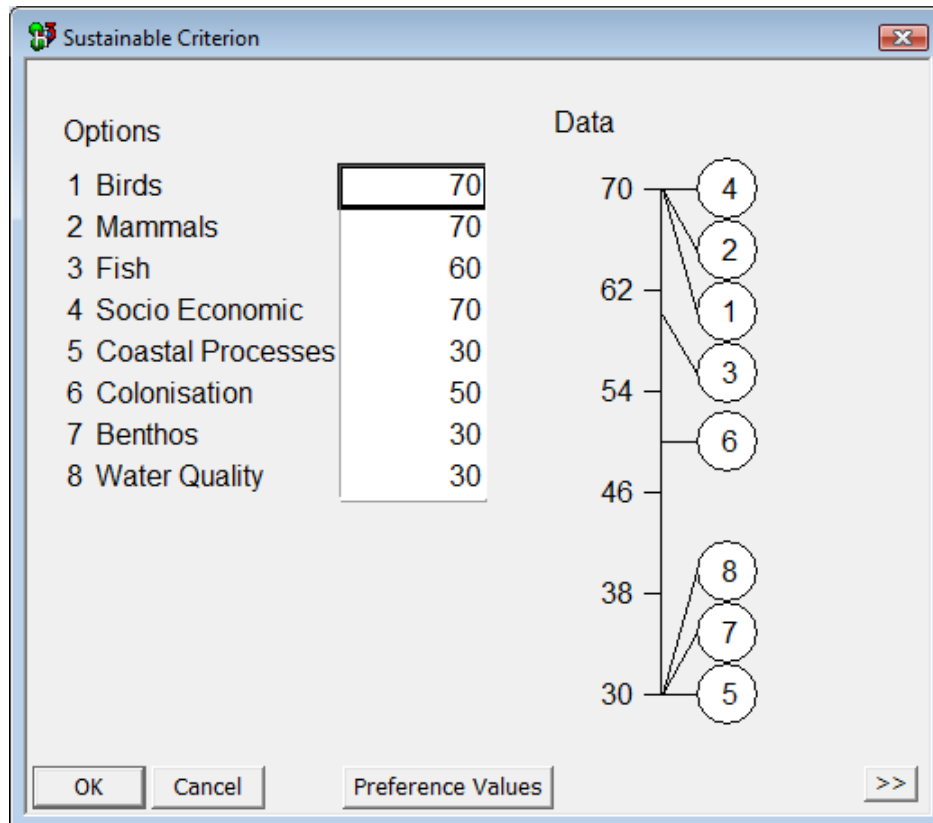
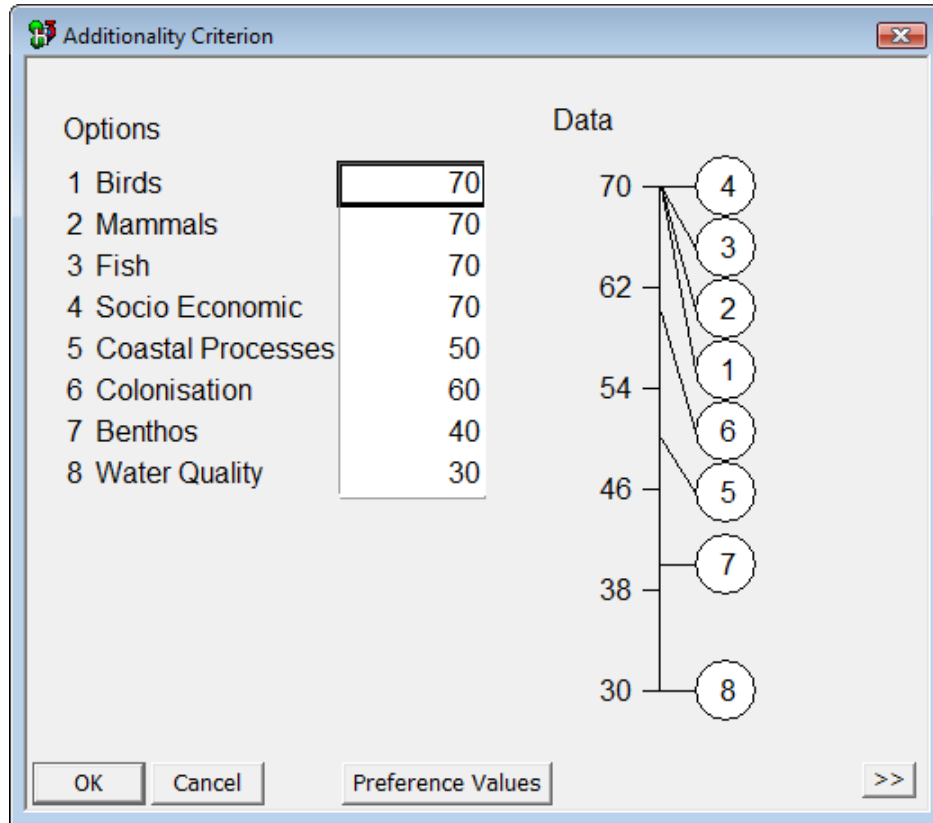
No scores were attributed to the criteria under Complexity as they were deemed to need specific research projects.

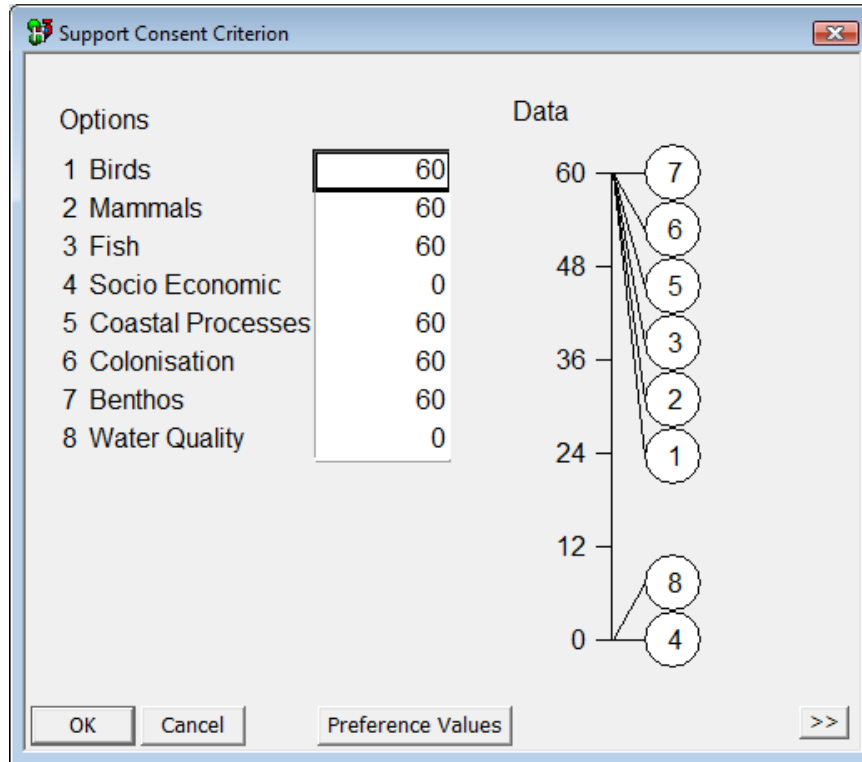


**EOWDC**  
**Research Themes Priorities**

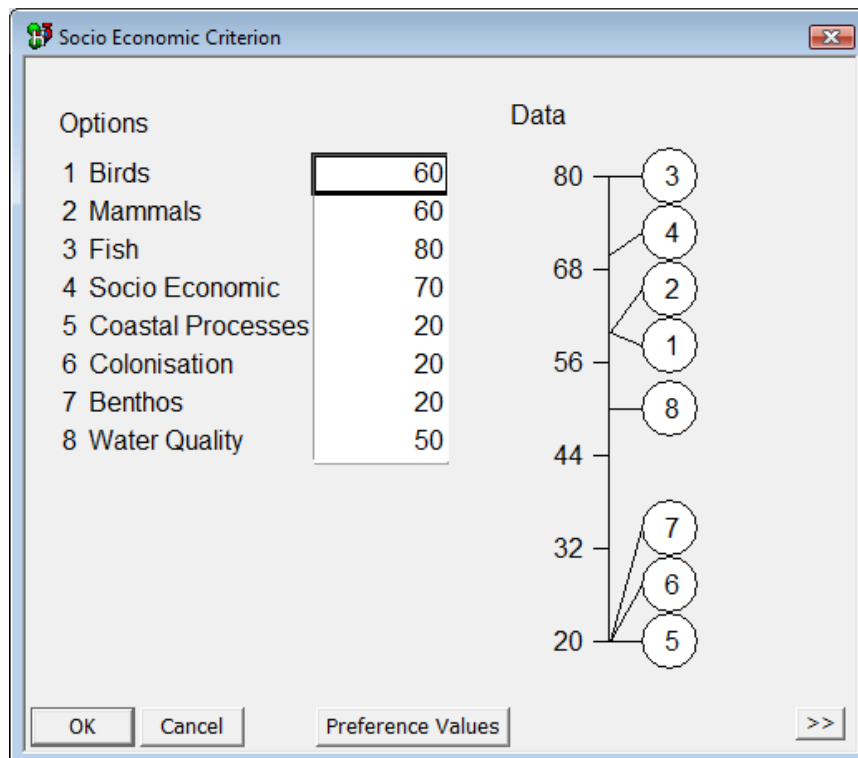






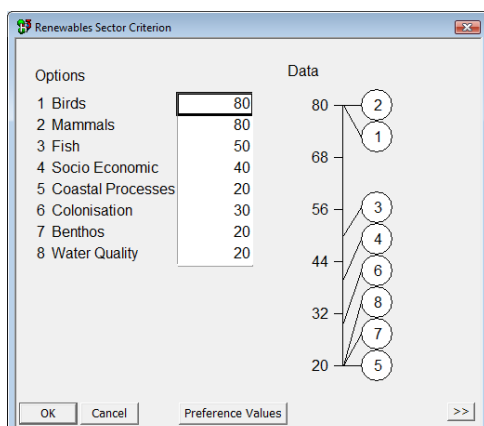
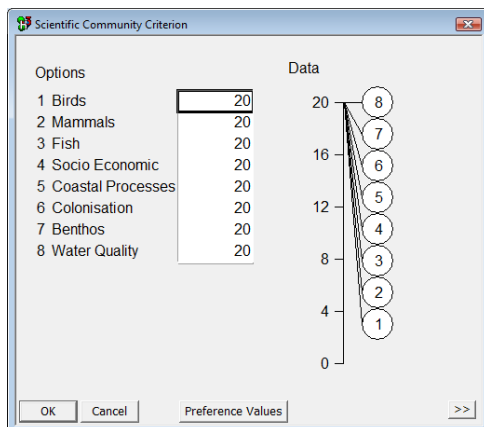
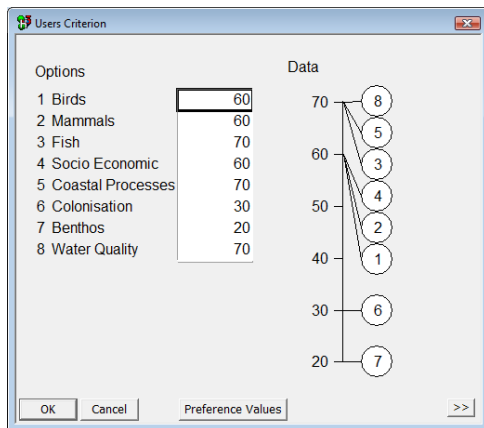
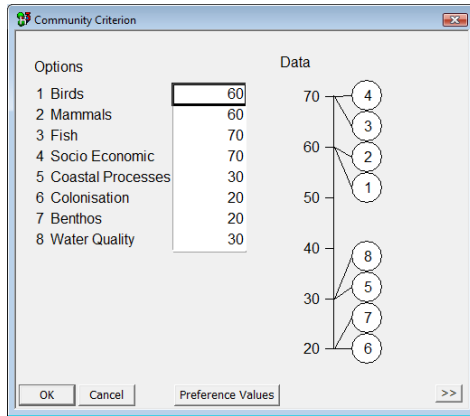


The Group were unable to attribute scores to Innovation attributes in the absence of specific projects to consider.



# EOWDC

## Research Themes Priorities



drghgg