

SEERAD, MLURI, MRI, SAC, SCRI

Consultancy on Proposed Collective Structure

Contents

Section	Page
Executive Summary.....	1
Background Information and Scope	13
Current Links, Activities and Funding Sources.....	22
Collective Structures – Option Identification.....	33
Collective Structures – Appraisal	38
The Next steps	67
Appendix I – Joint Strategic Aspirations.....	69
Appendix II – Success Criteria	71
Appendix III – Examples of Shared Service.....	75
Appendix IV – Descriptions of Centres of Excellence	77

Statement of responsibility

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Executive Summary

- 1.01 In presenting our overall analysis of the outcome of this consultancy exercise, we are highly encouraged by the joint commitment of the members of the Steering Group, representing SEERAD and the four bodies (*The Macaulay Land Use Research Institute, the Moredun Research Institute, the Scottish Agricultural College and the Scottish Crop Research Institute*), to openly review and consider options which might exist in the future for the structure and modus operandi of the SEERAD-sponsored bodies.

Shared Vision

- 1.02 This joint commitment has enabled us to identify a shared vision for closer working between the four sponsored bodies of SEERAD and an agreed ranking of the factors or perspectives that must be achieved within any change in the current *modus operandi*, together with a range of options which present opportunities to implement enhanced arrangements for the delivery of future science of direct relevance to the land-based research sector.

A Shared Vision for the Future

- Increased International recognition for contribution in each of the areas of animal bio-science, environmental and plant related research which will have enhanced impact in a world wide context
- Promotion and enhancement of research excellence
- Deliver scientific research that is strategically relevant to Scottish Minister's policy, legislative and enforcement functions
- Increase in customer base, enhanced focus on end-user relevance and diversification of funding sources
- Achievement of sustainable critical mass and increase in multi-disciplinary working
- Ability to attract sufficient funding to invest in new technologies and meet the challenge of increasing regulation and external competition
- Capitalising on growth in investment in industrial bio-technology research and development
- Increase links with other complimentary research and development organisations and Universities
- Ensure that the research base is efficient and effective
- Provision of financially viable and sustainable education, consultancy and knowledge transfer activities

Transformational and visionary leadership

- 1.03 Whilst the purpose of the consultancy was not to identify a preferred option, we believe that the Boards of each body need to openly debate and evaluate each of the options presented in this report in consultation with their staff and key stakeholders.
- 1.04 We acknowledge that this will be a challenging process and would strongly encourage each Board to have the vision and drive individually and collectively to facilitate the necessary change which will secure the long term sustainability of the current research base and its contribution to the science base nationally and internationally through a revised collective structure which fully addresses the risks inherent in maintaining the status quo.
- 1.05 These risks include:
- Continuing shortfalls of income against increasing salary and scientific running costs which are reducing the ability of each body to invest in new developments and require continuous efficiencies to be achieved, particularly in the areas of corporate and support services.
 - Unless new sources of research funding can be identified and captured, capacity may have to be reduced, thus further eroding the science base in Scotland.
 - Not being in a position of advantage to address issues of critical mass in the medium to long term.
 - The continued need to secure capital funding required for laboratory and facility refurbishment and replacement.
 - The loss of opportunity to take advantage of the potential benefits of closer collaboration between or coordination of the activities of the four bodies
 - Universities in Scotland and elsewhere in the UK are potential alternative providers for considerable parts of the current SEERAD research programme.
 - Open competition for core SEERAD research funds may mean a loss of some research income to the four bodies.
- 1.06 The challenge of managing the transition from the status quo will present risks for the Boards, senior management and staff within the four bodies. Nevertheless, with visionary leadership, shared commitment and strong management, the transition to closer working between the four sponsored bodies can be achieved in a manner that builds on the inherent strengths of the current organisations and creates the change necessary to enhance their recognition and reputation for research excellence and knowledge transfer, nationally and internationally.

Identification of Options

- 1.07 To achieve the shared aspirations and vision, the project steering group reviewed a number of potential future collective structures for the four bodies (or revised ways of working) and agreed on the following three short listed options, namely:
- Option 1 - A merger (with four sub options),
 - Option 2 - Strategic Partnership (with additional sub option) and
 - Option 3 - Transfer to the University sector.

It is important to note that Option 3 is in effect a series of collective structures between sponsored bodies and universities rather than bodies themselves, as the option would most likely involve more than one University.

Identification of Options (continued)

- 1.08 Whilst we believe that these all represent viable options for a future collective structure (with the university option being collective between the sponsored bodies and universities), the options do vary in terms of their ability to meet the following prioritised success factors that were identified and agreed with the members of the steering group.

Perspective	Ranking
Achieving a position of sustainable financial security and viability	1
Delivering scientific research that is strategically relevant to Scottish Ministers policy, legislative and enforcement functions	=2
Meeting and being responsive to customer needs and achieving national and international recognition for research excellence	=2
Managing the delivery of research and other complimentary services in an efficient and effective manner	4
Commitment to robust governance	5
Ability to attract, motivate and retain scientific staff, high quality leadership and share knowledge across disciplines and work in multi-disciplinary teams	6
Level of complexity/ease of transition	7

Overview of the options

- 1.09 In terms of the salient high level features inherent within each option we would present the following high level analysis of each option.

Option 1: Merger

- 1.10 Under the merger option, four individual scenarios were considered, ranging from a merger of all four bodies on a new single site through to the establishment of a new holding company. Common to all these options was the dissolution of the existing Boards and the transfer of overall management control and governance to a newly appointed single Board and senior management team.

Option one has the potential to create a more financially resilient solution for the four bodies, given the greater diversity of income streams that would fund the combined structure and the potential for efficiency savings. With the continued development of the Centres of Excellence being created through The Aberdeen Centre for Environmental Sustainability, The Edinburgh Bioscience Research Centre and Plant Science Scotland, the merged option would also build upon the benefits of the scientific critical mass being created through these collaborative arrangements.

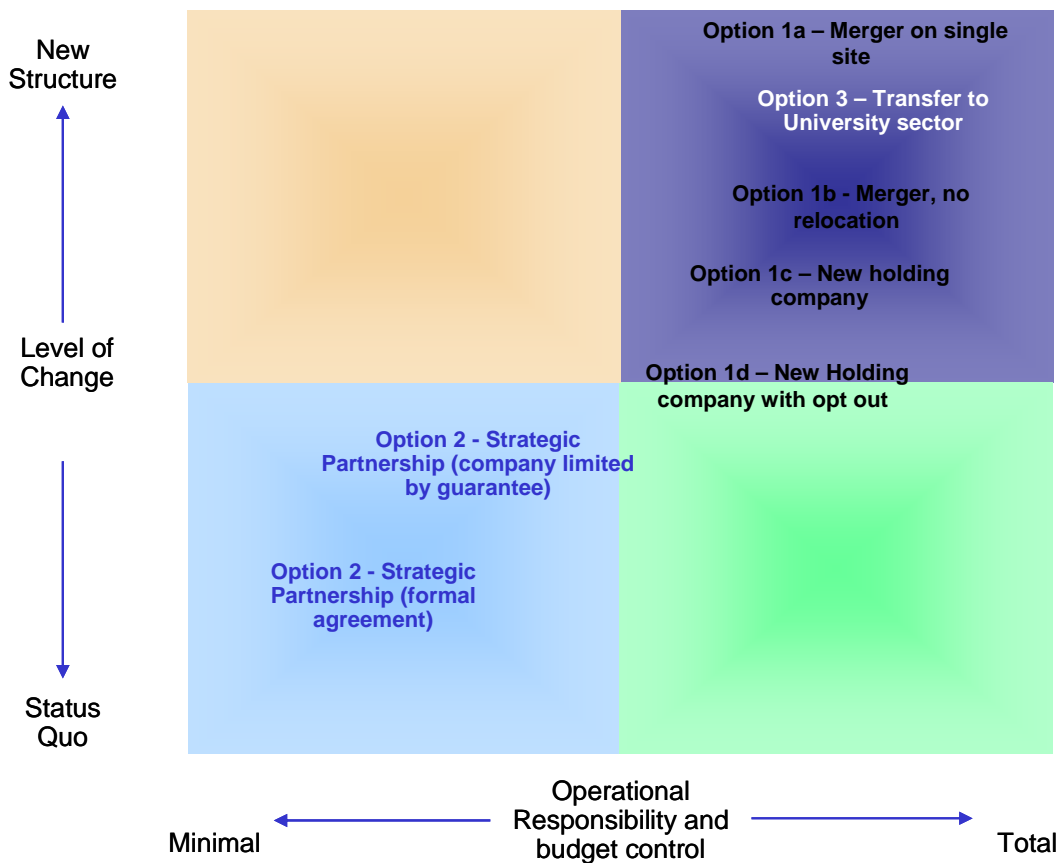
There are acknowledged challenges within this option around the appointment of new boards and senior management teams. The long term benefits could however lead to a more flexible and adaptable organisation.

Option 1: Merger (continued)

1.11 We believe that the merger options, also present a genuine opportunity to increase the potential to achieve:

- A critical mass of researchers and research activity.
- A stimulating research culture that attracts high quality and high reputation staff.
- National and international recognition - being seen as leaders in areas of specialism.
- High esteem from peer group, seen as setting a bench-mark in Research, Consultancy and Education.
- Positioning at the cutting edge of research and new science, undertaking work which pushes science boundaries, rather than just filling in gaps in knowledge.

1.12 In terms of change, Option One (together with Option 3) present the greatest opportunities to affect change to assist in securing financial stability and sustainability and align operational and budgetary responsibility across all four bodies. *In option 3 the extent of change is of a similar magnitude, but there will be a need to understand how the current funding arrangements will change if the bodies were to transfer into the University sector in order to clarify where liabilities would lie for elements such as pensions and redundancies.*



Option 1: Merger (continued)

Advantages	Disadvantages
<ul style="list-style-type: none">✓ Opportunity to build a coherent vision and strategy for a single organisation✓ Single internal process for determining the allocation of funds to the key research programmes, hence removing internal competition for funds✓ Ability to pool resources to share support services effectively✓ Coordination of knowledge transfer and enhancement of commercial activity✓ Greater diversification of activities and income streams.✓ Increased breadth and capacity to compete more effectively in securing research funding✓ More flexibility and capacity to align resources and facilities to support research activities	<ul style="list-style-type: none">✗ Time to deliver and manage the transition to a merged organisation✗ Implementation and transactional costs may have to be underwritten✗ Staff conditions and terms will be different✗ Loss of identity of four bodies within new organisation

Option 2a: Strategic Partnership

- 1.13 This option has the potential to create a more co-ordinated research output from the four bodies if real commitment to the partnership by all parties is achieved. The partnership will not however achieve the same level of financial resilience as the merged options, although it is acknowledged that operating in a more co-ordinated manner may strengthen their presence in the market place and hence make them more competitive particularly in securing funding. Compared with the other options, the existence of different layers of governance and accountability would impact upon the ability of the Partnership Board to align each body to a single strategic planning process, co-ordinate asset investment and utilisation and effectively allocate and re-allocate resources, except through mutual agreement.
- 1.14 Consequently, to achieve clarity of strategic decision and agreement on priorities, the Partnership Board would need to be sufficiently influential to shift the alignment of the four bodies in a manner that would contribute to improved research excellence and overall performance. Other partnership arrangements that are developing through the ACES (Aberdeen Centre of Environmental Sustainability), EBRC (The Edinburgh Bioscience Research Centre) and PSS (Plant Science Scotland) projects would also need to be carefully managed and organised to gain the maximum benefit for the four bodies and associated stakeholders in terms of the science undertaken. The key benefits of the Centres of Excellence would be the enhanced links that they would provide with Universities and the potential to link and better co-ordinate the activities of a greater critical mass of scientific expertise.

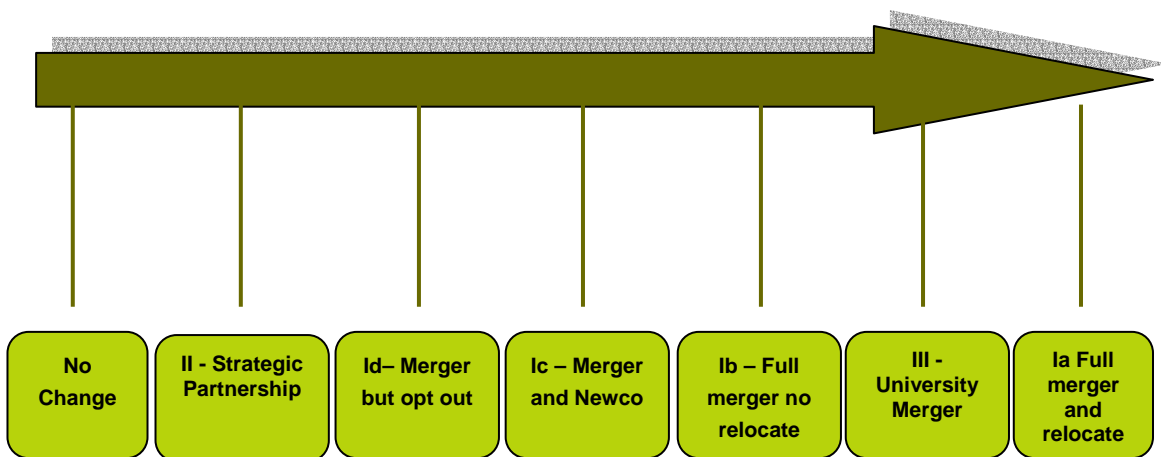
Option 2a: Strategic Partnership (continued)

- 1.15 The elements that would require to exist to make the partnership successful would be:-
- Full commitment and buy in from the Boards and the senior teams in the four bodies.
 - Rigorous and robust partnership protocols to define the set up and running of the strategic partnership.
 - A high level of trust and a willingness to share and pool staff and resources for programmes of activity (and potentially parts of budgets).
 - Commitment to sharing of certain services in order to achieve some financial savings and to remove areas of duplication.
 - Engage with and manage stakeholders through the process of moving into the strategic partnership.

This option faces significant challenges around focused leadership and clarity around future strategic direction and would represent the least shift from the status quo.

- 1.16 The strategic partnership option, however, if taken forward as part of a transitional phase leading to development of more formal merger options would have the potential to assist in creating the right environment for a successful merger to be implemented.

Potential for progression of change from status quo



Advantages	Disadvantages
<ul style="list-style-type: none"> ✓ Could lead to greater coordination of research activity between the four bodies ✓ Staff remain within their existing organisations ✓ Minimal set-up costs ✓ Fast transition to partnership set up ✓ Enhanced links with Universities 	<ul style="list-style-type: none"> ✗ Accountability and governance lines may be blurred ✗ Lack of a corporate identity ✗ Potential difficulty in gaining commitment to objectives agreed by the Partnership Board ✗ Limited opportunities to achieve efficiency savings

✓ Potential for greater critical mass of scientific expertise through the Centres of Excellence	
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Option 2b: Partial Merger with delineated responsibilities to new Strategic Board within a holding company

- 1.17 This option has the potential to create a more co-ordinated research output from the four bodies and builds on many of the benefits previously discussed in option 2a. The main difference in this option is that the Strategic Board would have enhanced responsibilities and be formally established within a newly created holding company. These enhanced responsibilities would give the Strategic Board capacity to allocate research programme funding (principally from SEERAD) to the four bodies within the partnership through the development and commissioning of an integrated science plan.
- 1.18 Success of this option will be dependant on the ability to derive a governance structure that gives the Strategic Board real powers to direct and steer the four bodies. The primary role of the four bodies will be to deliver quality and appropriate research, consultancy and education for all its key stakeholders. By giving the new Strategic Board the responsibility to provide overall strategic direction the Boards of the four bodies can focus their energies on delivering relevant outputs.

Transfer to the University Sector

- 1.19 The challenges within this option relate to the fears amongst the four bodies of experiences of other transfers to the university sector. We believe however that the financial position of the four bodies, together with the combined commitment of SHEFC, SEERAD and the relevant Universities could ensure that any transfers were undertaken with a firm and clear commitment to support and preserve the contributions of the research activities within the bodies to the science base within Scotland. Any transition would need to take account of timescales and the capacity of the Universities to handle potentially more than one Institute transfer in a relatively short time frame. It would be essential to have agreements and contracts in place to safeguard the future scientific base.
- 1.20 The transfer to a single University would be unlikely to be practical given the strong links each of the four bodies has with existing Universities. There are strong and natural links with the main Universities and it would be likely that the synergies and links with the University of Aberdeen, University of Glasgow, University of Edinburgh and University of Dundee would provide options for MLURI, SAC and MRI and SCRI respectively. It is important to highlight that this time the Universities are driven by the need to meet the requirements of the Research Assessment Exercise (RAE) and at present that has focus on the types of applied research that the Institutes and SAC currently undertake. In the next round of RAE's there will however be greater account of the need to include policy relevant measures.
- 1.21 The transfer to the University sector has the potential to share the same benefits as a merger of the four bodies. However given the scale and diversity of the research base and activities within the University Sector there is the added potential to achieve other benefits such as the:
- Intellectual environment created by a larger group of researchers adding to overall vitality.
 - Opportunity to exchange and develop ideas.
 - Marginal costs of research (support service costs) are reduced when a larger group contributes to the infrastructure.
 - Simultaneous and parallel development of research themes.
 - Diversity of thought and of sub discipline, increasing the likelihood of cross-fertilisation and fruitful knowledge developments.
 - Larger groups of research students providing a more supportive atmosphere for research training.

It is important to note that some of the above benefits can still be achieved within the Centres of Excellence models, necessarily requiring a full merge to take place.

Transfer to the University Sector (continued)

Advantages	Disadvantages
<ul style="list-style-type: none"> ✓ The breadth and volume of research undertaken within the University sector and the support that would be available could lead to greater success in applying for research funding. ✓ Faster development of research themes and hence commercialisation of science through established knowledge transfer vehicles within Universities could apply to some of the knowledge transfer from the sponsored bodies. ✓ The intellectual environment within a University setting would add to the stimulation provided to the research staff by interacting with a broader group of researchers although this is currently being achieved through strategic alliances. ✓ The established support services likely to be available within the University sector will mean that efficiencies and economies of scale could be secured 	<ul style="list-style-type: none"> ✗ In response to the indicators in the RAE, the University sector focuses on research which leads to publication in high impact journals. It is therefore possible that because of the nature of the research undertaken within the bodies that there would be a loss of research focus within that environment ✗ The scale of the operation to transfer into the University sector would take a significant effort to plan and undertake, and it is likely that there would be significant complications around harmonisation of staff terms and conditions and pension arrangements. ✗ The loss of identity of the four bodies. ✗ Potential reduction in a dedicated resource for land based research in Scotland due to fragmentation of research through the move to a number of different Universities

Costs and potential savings

1.22 For the purpose of **high level illustration** we have noted below approximate costs and potential savings for each option.

	Option 1				Option 2	Option 3
	1a	1b	1c	1d		
	£m	£m	£m	£m	£m	£m
Costs						
New build	140 - 200	-	-	-	-	-
Disposal proceeds	(25-50)	-	-	-	-	-
Professional fees	1.0	0.3	0.3	0.3	0.2	0.75
Relocation costs	20 - 30	-	-	-	-	-
Restructuring costs	5 - 10	2	2	1.5	0.5	2 - 10
Pension costs	Note 1	Note 1	Note 1	Note 1		Note 1
	141 - 181	2.3	2.3	1.8	0.7	2.75 – 10.75
Recurring annual savings						
Senior Management	0.35	0.3	0.25	0.2	-	0.35
Support services	0.5 – 0.75	0.5	0.3	0.3	0.1	0.5
Estates	0.5 - 1	-	-	-	-	-
	1.35 – 2.1	0.8	0.55	0.5	0.1	0.85

Note 1 – the funding of pension costs is recognised as a significant issue and will affect each option. The transfer of any pension liability to a new collective structure would be subject to negotiation on a case by case basis.

1.23 The above indicative analysis highlights that the costs of a full merger and relocation (Option 1a) will not be recovered through costs savings alone. If this option is to succeed financially, the new single co-located organisation would need to generate a significant department (SEERAD) change in the level of additional recurring funding out with the core sponsor. In respect of the other variants under Option 1, there would be recurring savings, although our experience would indicate that these will not be as significant as first envisaged.

1.24 The key success factors under options (1a, b, c and d) would be the need for of the revised collective structure to generate additional income (it is important to note that option 3 is a series of collective structures with universities rather than a collective between sponsored bodies). Such income growth would however be less than that required under a full merger and relocation thus providing the potential for these options to be financial sustainable in the

medium to long term.

- 1.25 In terms of securing Option 3, negotiations would be required with the University(s) to agree how assets, liabilities and staff employment contracts and obligations would be transferred and how any costs of merger would be met. The quantum of savings that the University could achieve would be dependent upon the degree of post merger re-structuring.
- 1.26 Option 2, the strategic partnership will offer few recurring savings. Any shared service cost savings would likely be offset by the additional VAT liability that would be imposed when cross charging for the provision of services that would be undertaken. This option is the least likely to secure the quantum change required to secure the medium to long term financial sustainability of the four bodies.

Background Information and Scope

Background – review of SEERAD Strategy

2.01 Since 1999, the Scottish Executive Environment and Rural Affairs Department has published a number of strategies particularly in the areas of Agriculture, Rural Development and the Environment. These set out how the Department will go about achieving its main aims which are:

- To help improve the economic performance of Scotland's agriculture, aquaculture, fishing and food industries within the wider context of sustainable exploitation of our land, sea and freshwater resources and rural development, while safeguarding the interests of consumers, protecting and enhancing the environment, and ensuring a fair deal for taxpayers
- To support Ministers in helping the people of Scotland secure a high quality of life through sensitive stewardship and sustainable development of the natural resources of Scotland; in particular by securing a clean, healthy and safe environment, ensuring a safe and effective water industry, and improving people's enjoyment of the environment

2.02 In addition, the Department takes the lead for the Scottish Executive in supporting and promoting Sustainable Development. Research has an important role to play in assisting and supporting the development of policies. SEERAD therefore funds a range of agricultural and related biological and environmental science covering basic and strategic research through to more applied work.

2.03 A large proportion of the research (>85% by value) supported by ABRG is carried out within its main research providers which are the 5 Research Institutes, the Scottish Agricultural College, RBGE and BioSS, with the remaining work being contracted to a number of Universities, Research Council Institutes and private research organisations.

Review of the 1999-2003 strategy

2.04 In terms of meeting its main aims SEERAD has undertaken a review of the progress made against the 1999-2003 strategy. The outcome of the consultation highlighted that key progress had been made in the following areas:

- Significant broadening of the end-user base for the research programme;
- The proportion of the underpinning core programmes with relevance to policy divisions. needs increasing more than two-fold, from 25% to 54%;

- Increases in competition for research funding and in collaboration between research organisations;
- The quality of the main research providers research programmes increased and was assessed as on a par with Research Council Institutes.

Review of the 1999-2003 strategy (continued)

2.05 Whilst recognising this level of progress there were a number of conclusions derived from the consultation and other discussions which needed to be reflected in the future SEERAD strategy, if its aims were to be fulfilled:

- Within the research funded by the ABRG there are areas of the highest international quality and areas of lower quality
- There needs to be a greater emphasis on the relevance of the research funded by ABRG to policy and other end user communities
- The focus of the research needs to move towards new priorities in the environment, agriculture and food chain areas
- Commissioning of the research in future should be through a Programme Approach rather than through sponsorship of organisations
- Commissioned research should move towards support through grants for Rolling Programmes rather than grant-in-aid to the main research providers
- There should be a further increase in the focus on knowledge transfer and uptake, and on publicising more generally the research outputs from the Programme
- More research funding should be awarded competitively
- Research Institutes are funded to make an important contribution to the UK science base by undertaking strategic research which should complement rather than duplicate the basic research undertaken by Universities
- There is a need to address the lack of critical mass within the main research providers and to consider the potential for structural re-organisation

Development of the 2005-2010 strategy

2.06 On the basis of the above comprehensive exercise an updated strategy to guide the work of ABRG for the period 2005-2010 has been issued following a process of consultation. The Strategy is guided by the vision of establishing a research programme which:

- Supports the policy and other functions of the Department, and the work of its various client groups, through the provision of high quality and relevant scientific knowledge
- Gains international recognition for its value and quality
- Is a fundamental and essential part of the scientific community in Scotland

In support of this vision the Strategy is based on 3 main objectives:

- To procure scientific research that is of high quality and strategically relevant to Scottish Minister's policy, legislative and enforcement functions
- To improve knowledge and technology transfer from, and public awareness of the research and its outputs

- To ensure that the research base providing the work funded by ABRG is efficient and effective

2.07 A further underpinning requirement is that ABRG will seek to maximise the policy relevance of the work it supports. Over the years from 1999 to 2003 the proportion of research funded by ABRG which could be classified as policy relevant increased from 25% to 54%. In the next 5 year ABRG will expect this figure to increase to at least 75%.

Supporting the delivery of the strategy

- 2.08 In terms of fulfilling the objectives the strategy also sets out the key supporting arrangements that will require to be implemented during the five year period 2005-2010. These requirements are summarised briefly below.

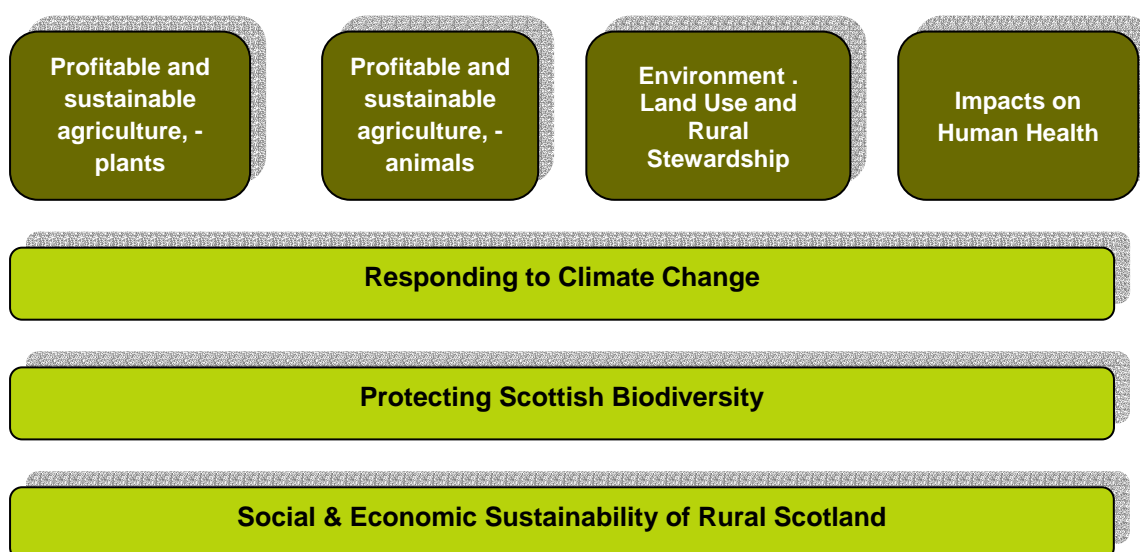
OBJECTIVE 1. RELEVANT RESEARCH

To procure scientific research that is of high quality and strategically relevant to Scottish Ministers policy, legislative and enforcement functions.

Adopting a programme approach

- 2.09 In the past, research funded by ABRG has been aligned to needs through changes to the remits, missions and scientific disciplines employed by the main research providers. Although the remits were agreed by ABRG, they reflected the views of the main research providers themselves and their capability and aspirations rather than being primarily informed by the Department's overriding concerns. The main research providers are not departmental agencies but independent companies. This approach is no longer appropriate.
- 2.10 ABRG will therefore change to a Programme Approach to funding research and the development of an integrated science plan. This will be a significant difference in the way in which research needs are determined, developed, managed and funded. Research Programmes will focus on the areas of policy priority to SEERAD and the needs of key stakeholder groups. They will concentrate on the outcomes of research, not on the detailed management of the resource inputs to the process (which tends to be the focus of the present system).

Programme Areas and cross cutting themes



OBJECTIVE 2 KNOWLEDGE TRANSFER AND EXPLOITATION

To improve knowledge and technology transfer from, and public awareness of, the research and its outputs.

- 2.11 The issue of knowledge transfer and the commercialisation of research has risen rapidly in importance in the last few years. Much of this interest has focussed on the potential for research to underpin wealth creation and build economic growth. The need for and development capability of its Universities and Research Institutes is well recognised.
- 2.12 ABRG has operated a small budget for knowledge and technology transfer activities over the period of the previous research strategy and now proposes to increase this during the period of this new Strategy.
- 2.13 Each research Programme will therefore be expected to have an identified knowledge transfer stream and will be funded accordingly.

OBJECTIVE 3 - SUSTAINABILITY OF THE SEERAD RESEARCH BASE

To ensure that the research base funded by ABRG is efficient and effective

- 2.14 Over 85% of the research commissioned by ABRG is undertaken by its main research providers. Hitherto, considerable emphasis for the ABRG Programme was placed on maintaining a high quality science base, which contributed to the overall UK science base.
- 2.15 While contributing to the UK science base will remain an important aspect of ABRG funding, it can no longer be the priority objective. The relevance of the research was therefore deemed to be of critical importance.
- 2.16 Notwithstanding the continuing role for Research Institutes, the Strategy Review also examined closely whether there were more effective and efficient ways for provision of research to meet the Department's needs. The current position is not sustainable in the medium to long term. Measures to maintain value for money for the ABRG research budget, and to address the fundamental issue of critical mass, including reconfiguration and consolidation, are needed for long-term sustainability.
- 2.17 It is clear that with the important advances in technology, scientific research can start to address much larger and more important problems, particularly in the biological and environmental sciences. However, these need to be tackled by larger teams of researchers, often drawing on a range of skills and expertise to generate inter-disciplinarily. The increasing cost of carrying out biological research suggests that some areas of research will necessarily reduce over the period of this Strategy. However, it is an inescapable conclusion that individually ABRG's main research providers are relatively small institutions in a UK or international context. This is not sustainable and they need to seek ways of working in larger clusters.

Jamieson Report

- 2.18 A further consultancy study was therefore commissioned to consider these issues in more detail and examine the challenges involved in forming long term relationships between Universities and ABRG's main research providers including embedding the Institutes in Universities. It also explored the scope and potential for reorganisation and integration of the main research providers to support common activities. The main findings and conclusions of the Jamieson review were as follows:

Main findings

- 2.19 • Continuing shortfalls of income against the seven sponsored bodies' (SBs) increasing salary and scientific running costs will require continuous efficiencies. Unless new sources of research funding can be tapped or public funding increased, capacity will have to be reduced.
- Individually the SABRIs are relatively small institutions in a UK context and are beginning to experience critical mass problems. Some administrative overheads are replicated at each SB. Measures to maintain critical mass, including reconfiguration and consolidation, are needed for long-term sustainability.

Jamieson Report

Main findings (continued)

- More attention needs to be paid to the SBs' capital development and asset base management. Some sponsored bodies are adequately capitalised; others have major needs for laboratory and facility refurbishment and replacement.
- SAC and the SABRIs have moved away somewhat from their traditional complementary missions. The SABRIs have developed their own arrangements for knowledge transfer and there are now some competing research programmes between SAC and the SABRIs.
- Research institutes and Universities in Scotland and elsewhere in the UK are potential alternative providers for considerable parts of the current SEERAD research programme, particularly the basic-orientated and applied strategic components. Some of the research would still have to be done in Scotland, but not necessarily by the SBs.
- The skill bases and unique resources of the SBs would often give them a competitive edge and they could expect to win a substantial share of the funds in any open competition. Nevertheless, open competition for core research funds would mean a loss of some research income.
- Since research council institutes would be expected to win SEERAD research funds in open competition, the SBs should seek reciprocal access to equivalent research council funds.
- In principle, co-location with selected universities could be a very appropriate way of strengthening and sustaining the research effort of some or all of the SABRIs without compromising their missions or strategic focus.
- Complete transfer of one or more SABRIs to a university, however, would not be consistent with a policy goal of maintaining a sustainable strategic research base. It could lead to mission drift, loss of strategic focus and would involve high transfer costs.

Conclusions

- 2.20 • The effectiveness and efficiency of current arrangements are under threat from several factors, which collectively are undermining the long-term sustainability of the sponsored body base. Its capacity to deliver the SEERAD strategic research programme is being eroded, as is the strategic research capability it represents for the Scottish Executive and the Scottish people. A strategy for sustainability is needed to maintain critical mass in key areas. Reconfiguration and consolidation of the research base, reduction of administrative overheads and adequate funding of infrastructure should be major features of the strategy.

- Research Institutes and Universities in Scotland and elsewhere in the UK are potential alternative providers for considerable parts of the current SEERAD research programme, particularly the basic-orientated and applied strategic components. Although there are potential benefits of open competition in terms of improved quality of research outputs, there are also disadvantages. Any moves towards more open competition should be introduced at a measured pace, and as part of a wider package of reforming the Scottish land-based biology science base.
- Introducing a programme approach to commissioning research, peer or strategic appraisal of the basic research and stronger engagement with Departmental policy users would significantly strengthen SEERAD's distinctive integrated approach to funding basic, strategic and applied research.

Brief of this review

2.21 The purpose of this consultancy was to build on the review of the research strategy and the findings of the Jamieson report to examine in detail the advantages and disadvantages of a range of options that might exist in the future for the structure and modus operandi of the four SEERAD-Sponsored bodies. The bodies included within this stage of the consultation were the Macaulay Land Use Research Institute, the Moredun Research Institute, the Scottish Agricultural College and the Scottish Crop Research Institute.

In undertaking this review we have:

- Consulted with the Heads of the Sponsored Bodies to understand the current position and links with the strategic stakeholders, including the higher education sector.
- Had discussions with SEERAD regarding the proposed move to procuring future research through a series of managed programmes and the need for these programmes to be presented in the form of an integrated science plan which will provide evidence of multi-disciplinary working and knowledge transfer
- Considered the potential implications and opportunities for sharing of various administrative and other support functions.

2.22 The following report presents our findings which sets out the collective structures considered in this consultation and our assessment of:

- The form and role(s) each collective structure would play and how they will contribute to the development of an integrated science plan.
- The contribution that each collective structure would make to the deepening of links with the University sector and how this would enhance intellectual and financial sustainability.
- The steps necessary to make the transition to any new collective structure.

Current Links, Activities and Funding Sources

Introduction

3.01 In this Section we have provided:

- A summary of the current key strategic links each of the sponsored bodies has with third party organisations;
- An overview of the research activities undertaken in relation to the SEERAD Research Programme Themes and 22 sub-themes;
- A summary of the current financial position of each body.

Key Strategic Links

All four institutions forming part of this review have links and collaborations with a wide range of organisations throughout the UK and Internationally. These links relate to the following:-

- Resource - sharing of skills, knowledge and people
- Academic - sharing of academic learning and training
- Project links - formal partnership working on funded projects
- University Validation.

3.02 The details in the tables below highlight the wide breadth of strategic links that the bodies have. These links cover aspects such as the sharing of facilities in both research and infrastructure and collaborations on research projects. The breadth of inputs from other organisations to the activities within the bodies indicates the already high level of linkage that exists with third parties. SAC have several links which involve the coordination and sharing of Education facilities, they also have established research links. MLURI have a number of collaborative links which involve the University of Aberdeen and several national and international research projects. They also have a key link which facilitates the secondment of staff from another European Institute. MRI have a number of research project links (both public and private) and also links which assist with the procurement of funding for research. SCRI have a number of links which relate to joint projects and research activities and are involved in an initiative for food quality and safety.

3.03 This range and breadth of activities shows the potential for enhancement of the links that could be achieved by working in a more collective arrangement. The combined strengths of

these links would undoubtedly open up opportunities for the bodies and the value and significance of the enhancement should not be underestimated. The following table shows examples of the key links provided by the four bodies.

Key Strategic Links (continued)

SAC - Example strategic links
1. Shared campus accommodation resources.
2. Progression from further education to higher education courses
3. Shared research resources at Bush Estate, Edinburgh
4. Degree validation, with Glasgow, Edinburgh and Aberdeen Universities
5. Sustainable Livestock Systems Research – genetic evaluation
6. Developmental biology research
7. Studies on animal behaviour and animal welfare
8. Research on the inter-relationships between nutrition and animal health
9. Molecular basis of resistance to disease in plants
10. Animal Health & Epidemiology
MLURI - Example strategic links
1. Development of the Aberdeen Centre for Environmental Sciences
2. Bronydd Mawr (collaboration with IGER in the management of a Research Station in Wales)
3. Twinning agreement with INRA, France (to facilitate staff exchange)
4. Soil Health Initiative with the University of Aberdeen
5. Joint chair with the University of Aberdeen
6. Development and application of the MAGIC model – international collaboration
7. Grazing and Upland Birds – a collaborative project with research organisations and NGOs
8. Carbon emissions from soils – a collaborative project
9. Habitat Restoration Project – a collaborative project funded by SNH
10. Participation in Alter-Net a long term biodiversity, ecosystem and awareness EU-funded research network.
MRI -Example strategic links
1. SEERAD Core and Flexible Funding collaborations
2. Grant coordinator for European Commission Framework Funding (Framework 5 and 6 including Marie Curie Grant)
3. Variety of Grant funded research including DEFRA funded work (value £11m)
4. Contract research for pharmaceutical industry
5. Joint Chair with University of Glasgow GUVS

6. Joint Chair with University of Edinburgh (R(D)SVS)
7. Integration of Functional Genomics and Immunology and their application to infectious diseases of ruminants
8. Vaccination against gastrointestinal nematodes of ruminants
9. Collaboration on Pathogenesis of Malignant Catarrhal Fever
10. Genesis Faraday

Key Strategic Links (continued)

SCRI -Example strategic links
1. CHIP' – Centre for Health Inducing Plants
2. Functional genomics of luteovirus movement in plant hosts and aphid vectors.
3. Food Quality and Safety Evaluation
4. University of Dundee – SCRI Partnership: Different initiatives in Life Sciences; Health & Medicine; Bioinformatics; Engineering; various collaborative projects.
5. APOPHYS – EU Framework 5 Research Programme. BIO-EXPLOIT - EU Framework 6 Research Programme.
6. Blackcurrant: breeding, agronomy and biochemistry.
7. Potato Breeding: commercialisation of germplasm from certain publicly-funded germplasm enhancement programmes and privately-funded targeted potato breeding programmes.
8. Targeted potato breeding programme for french fries.
9. Development of decision support software for the potato starch industry.
10. Investigations of the interactions between potato cyst nematodes (PCN) and the potato crop in terms of damage, nematode population dynamics and integrated control.

Overview of Research Activities

3.04 We have undertaken a high level exercise to map the research programmes that the four institutions were engaged in during 2003/04 to the SEERAD Research Programme Themes and 22 sub-themes. The main conclusions that we were able to derive from this analysis were as follows:

- **Theme 1: Soil and Environmental Sciences**

Around this theme the majority of the research is undertaken by MLURI. SCRI and SAC to a lesser extent also undertake research under this theme.

- **Theme 2: Plant Science**

This theme is very much the speciality of SCRI. They are currently working across almost all the sub-themes within Plant Science. SAC are also involved in a number of projects linked to this theme.

- **Theme 3: Animal Physiology and Product Quality**

This is not a key area of activity for any of the institutions. SAC are performing most work in

this area and there is no overlap with any other institution.

- **Theme 4: Animal Disease, Behaviour and Welfare**

Around the theme of Animal Disease, Behaviour and Welfare, the Institutes involved in most activity are MRI and SAC. Both of these Institutes have been working more closely to co-ordinate their activities under this theme and it is expected that this collaboration will increase over time.

Theme 5 - Systems and Socio-Economics

MLURland SAC represent the majority of activity around this theme with SCRI also involved, particularly in the area of Plant Ecology. The MRI is the only institution not performing any activity in this area.

Summary financial commentary

3.05 Table 1: Income and Expenditure Accounts – year ended 31 March 2004

	MLURI £000	Moredun Group £000	SCRI £000	SAC £000	Total
Income					
Income from SEERAD - research	7,769	5,139	10,435	5,609	28,952
Income from SEERAD - other				13,738	13,738
Other research grants & contracts	2,366	3,565	2,926	7,599	16,456
Tuition fees and education contract				1,863	1,863
Investment income / interest paid	318	-337	107	-296	-208
Release deferred capital grants	1,059	376	1,726	1,520	4,681
Other Income	1,173	3,011	1,011	11,954	17,149
	12,685	11,754	16,205	41,987	82,631
Expenditure					
Salary costs	6,858	5,189	9,241	24,615	45,903
Other expenditure	4,477	5,203	5,112	15,349	30,141
Depreciation	1,132	1,165	1,757	1,910	5,964
	12,467	11,557	16,110	41,874	82,008
Operating Surplus / (Deficit)	218	197	95	113	623
Exceptional gains / losses	-308	488	-209	3,203	3,174
	-90	685	-114	3,316	3,797

Notes

- The above figures represent the consolidated results for each body.
- Other exceptional gains and losses represent non recurring income or costs

Salient features

Income and Expenditure

3.06 The combined income of the four bodies is £82.6m of which 52% or £42m is directly funded by SEERAD for research activities (£28m) and in the case of SAC to also support education (£5.5m) and veterinary disease surveillance/advisory services to the remote areas of Scotland (£6m).

3.07 Based on a high level overview of the financial position of each organisation, it is evident that each body is faced with the continued challenge of funding salary and overhead costs which are rising at a greater rate than the increase in core-funding. In addition, SAC continues to face the challenge of supporting its education activities for which capital and medium term recurrent funding has been secured from SEERAD. As noted in the analysis of options for collective structures the need to have robust plans for the future provision of education is recognised as a priority both from a financial sustainability and education perspective.

Based on the latest audited financial statements, the salient comments highlighted in the annual reports of each body were as follows:

Macaulay Land Use Research Institute

- 3.08 The Group had a successful year, with the Institute benefiting from increased support from the Macaulay Development Trust and its two commercial subsidiaries, one of which commenced trading in April 2003. The Institute is working closely with SEERAD to ensure the delivery of high quality, value for money research and end user relevance but is conscious of the need to develop non SEERAD funded research.
- 3.09 The Institute is also developing the concept of an Aberdeen Centre for Environmental Sustainability (ACES), involving the relocation of the Centre for Ecology and Hydrology from Banchory to the Institute and working more closely with the University of Aberdeen. This initiative is supported by the Trust and it is anticipated that the ACES will enhance the Institute's reputation and facilities and strengthen its ability to compete for competitive funding.

Moredun Research Institute

- 3.10 The directors are aware of the need to continue to achieve a balanced budget within the Institute following the improvement in the organisation's reserves during the 2002/03 financial year and are working towards continuing stability in the finances in future years. This position of continued financial stability is dependent upon the ability of the Institute to enhance its non SEERAD funded research activity and to control its salary and overhead costs.

Scottish Agricultural College

- 3.11 SAC has undertaken a significant internal re-organisation to address the deficit trading position it had been experiencing. This has enabled SAC to report a surplus for the period 2003/04, its first since 1995/96. SAC's Business Transformation Plan has been endorsed by Mr Ross Finnie, MSP, and Minister for Environment and Rural Development and supported by him through a commitment to additional funding which will assist SAC in the implementation of its plans. The plan will address the future needs of SAC's stakeholders and will result in improved services, modernised delivery and benefits to clients, students and the rural community.

Scottish Crop Research Institute

- 3.12 SCRI has a successful commercial operation Mylnefield Research Services Limited (MRS), through development of which it has been able to reduce its dependency on core SEERAD funding. This has assisted in enabling the Institute to carefully manage its staff and overhead costs which similar to the other bodies are continuing to rise at a higher rate than the increase in core funding levels.
- 3.13 In the year ended 31 March 2004, the Institute made a further £2.5m investment in capital equipment which has allowed it to upgrade its glasshouse, controlled environment and laboratory facilities and invest in additional analytical equipment. This will enhance the Institute's ability to bid for competitive funding, raise its international competitiveness and enable the development of additional research programmes.

Non SEERAD funding

- 3.14 As is evident from the above commentary, reducing reliance on core funding is central to each of the financial and corporate plans of the four bodies. Development of other sources of recurring revenue funding is viewed as being critical if current levels of activity and staffing are to be maintained.
- 3.15 If growth in non SEERAD funded income can be achieved and enhanced through better collaborative working and knowledge transfer, the medium to long term sustainability of each of the four bodies could be significantly enhanced.

Table 2: Analysis of other non SEERAD funded income

Year ended 31 March 2004	Other research income	Other non research income	Total	% of total income
	£000	£000	£000	
MLURI	2,366	1,173	3,539	28%
Moredun Foundation	3,565	3,011	6,576	55%
SCRI	2,926	1,011	3,937	25%
SAC	7,599	13,817	21,416	51%
	16,456	19,102	35,558	

Note 1: SAC includes tuition fees received of £1.9m

Note 2: Excludes release of deferred capital grants

- 3.16 In each body a significant element of the non SEERAD funding is secured through subsidiary operations. A brief description of the activities of the principal subsidiaries is noted below:

MLURI

- 3.17 The Institute has two commercial subsidiaries, which are owned by the Macaulay Development Trust. These two companies, along with the Trust, support the Institute by facilitating knowledge transfer, utilising and promoting the research and resources of the institute and providing financial support.
- 3.18 The Institute's principal commercial arm is Macaulay Enterprises Limited (MEL), established in 2003, which takes relevant institute research to the commercial sector. MEL is developing a range of services in 3 areas of current expertise within the Institute:
- Analytical Services to the oil and gas industry (and will diversify into other sectors)
 - Renewable Energy Services
 - Environmental including waste and contaminated land management
- The other subsidiary, Macaulay Research Consultancy Services Limited, focuses on areas such as data leasing, catchment management and water quality and on facilitating the transfer of knowledge generated through the research programme of the institute.
- 3.19 Both companies provide support to the Institute by purchasing consultancy and analytical services from the Institute and by gift aiding their profit to the Trust.

Year ended 31 March 2004	Turnover £000	Contribution £000
Macaulay Enterprises Limited	617	137
Macaulay Research Consultancy Services Limited	639	121

Moredun Foundation

- 3.20 **Moredun Scientific Limited (MSL)** offers contract research, collaborative research and technology transfer services to the pharmaceutical and biotechnology industries. The combination of customer focus, expertise of Good Laboratory Practice (GLP) and Good Clinical Veterinary Practice (VICH-GCP) quality systems, plus the scientific capability available within the Moredun Research Institute position MSL to be able to conduct safety and efficacy studies in accordance with European and US regulatory requirements. Any profit generated by MSL, not retained for re-investment, is transferred on an annual basis to the Moredun Foundation, which in turn uses the funds to help support the research programme of MRI. Moredun Scientific Limited's (MSL) main business activity is contract research for the animal health industry, concentrating mainly on efficacy and safety studies in livestock.
- 3.21 Pentlands Science Park is owned by the Moredun Foundation and extends to 22 acres and provides around 160,000 sq ft of high quality offices and laboratories for the Moredun Group and the other site tenants. The Park provides excellent facilities and services to enable all site tenants to carry out their work effectively. Pentlands Science Park Ltd is the service company which runs and administers all the parks property, facilities and management services in such areas as security, engineering, IT, catering and conferencing.
- 3.22 **VETAID** is a charity which is part of the Moredun Foundation and works with local organisations in underprivileged countries to prevent suffering and hunger. By active promotion of animal health and welfare and improved husbandry, VETAID aims to enhance the environment within which animals live and that of people who depend on livestock for survival.

Year ended 31 March 2004	Turnover £000	Contribution £000
Moredun Scientific Limited	1,197	240
Pentlands Science Park Limited	2,265	127
VETAID	1,036	33

Scottish Crop Research Institute

- 3.23 **Mylnefield Research Services (MRS)** was established in 1989 as the commercial arm of the Scottish Crop Research Institute (SCRI) to enhance competitiveness and understand and fulfil the needs of industry. MRS not only markets the unique resources and expertise of SCRI, but also undertakes near-market research and development. MRS has an option on all intellectual property (IP) generated at SCRI and has access to a unique range of scientific expertise, laboratory, glasshouse and field facilities and germplasm collections. MRS uses a variety of routes to generate income from IP and expertise, including licensing, contract research and the sale of products and services. The profit made on these transactions is gifted back to SCRI either directly or indirectly through the Mylnefield Trust. During the last four financial years MRS has gifted in excess of £1 million to SCRI and its affiliated charitable trust, the Mylnefield Trust. MRS places particular emphasis on product development (e.g. superior plant cultivars) and its products have considerable market share e.g. raspberries, blackcurrants and blackberries. Product development is collaborative between the science base and industry and is designed to be sustainable and meet end-user needs. Currently, seven plant breeding commercial programmes are contracted through MRS Ltd.

Year ended 31 March 2004	Turnover £000	Contribution £000
Mylnefield Research Services Ltd.	1,668	377

SAC

3.24 SAC Commercial Limited supports the development of land-based industries and communities through its expert advisory and consultancy services which are linked to the core research and education activities of SAC. It provides a range of consultancy services to more than 12,000 customers in Scotland, United Kingdom and worldwide, using over 375 consultants, veterinarians, technicians and support staff. The main focus of the commercial services are to deliver independent, quality and accessible services to farmer, rural business, food processing and supplier markets and undertake Research and Development contracts for commercial clients and NGOs.

Year ended 31 March 2004	Turnover £000	Contribution £000
SAC Commercial Limited	12,667	128

Table 3: Balance Sheet as at 31 March 2004

	MLURI £000	Moredun Group £000	SCRI £000	SAC £000	Total
Fixed Assets					
Land and Buildings	12,702	20,665	17,053	37,083	87,503
Other	1,687	3,522	6,688	3,376	15,273
	14,389	24,187	23,741	40,459	102,776
Other assets	4,504	214		2,403	7,121
Working capital	2,605	1,987	1,380	-540	5,432
Long term liabilities	44	6,217		5,035	11,296
Provisions			304		304
	21,454	20,171	24,817	37,287	103,729
Represented By:					
Restricted funds	189	2,750	9,255		12,194
Unrestricted funds	11,864	9,301	1,161	6,323	28,649
Deferred capital grants	9,401	8,120	14,401	30,964	62,886
	21,454	20,171	24,817	37,287	103,729

- 3.25 In addition to the continued revenue pressures, each of the four bodies needs to continually re-invest in the research infrastructure (buildings and equipments) to remain 'competitive' both in terms of research quality and outputs and their ability to recruit and retain highly respected and class leading research staff.
- 3.26 Levels of infrastructure investment we understand lag about £3-£4m behind the benchmark standard for other UK research institutes.
- 3.27 Given the financial constraints on sponsored bodies, it is likely that additional funding for capital investment will need to be generated by the bodies themselves through greater levels of externally funded activity or a reduction in the size of the estate occupied currently.

Core Bodies – financial position

3.28 If the above analysis was to exclude the subsidiary operations of each of the organisations, the core 'Bodies' income and expenditure accounts and balance sheets would present the following position.

Table 4: Income and Expenditure Accounts – year ended 31 March 2004

	MLURI	Moredun Research Institute	SCRI	SAC	Total
	£000	£000	£000	£000	
Income					
Income from SEERAD - research	7,769	5,139	10,398	5,609	28,915
Income from SEERAD - other				13,738	13,738
Other research grants & contracts	2,147	2,093	2,760	5,218	12,218
Tuition fees and education contract				1,798	1,798
Investment income / interest paid	35	78	78	-296	-105
Release deferred capital grants	1,059	376	1,726	1,520	4,681
Other Income	366	1,625	381	1,783	4,155
	11,376	9,311	15,343	29,370	65,400
Expenditure					
Salary costs	6,738	4,170	8,750	18,609	38,267
Other expenditure	3,551	5,203	4,773	8,902	22,429
Depreciation	1,066	550	1,757	1,874	5,247
	11,355	9,923	15,280	29,385	65,943
Operating Surplus / (Deficit)	21	-	63	(15)	69
Exceptional gains / (losses)		-	(209)	3,203	2,994
	21	-	(146)	3,188	3,063

3.29 In terms of the inclusion of the subsidiary operations within any new collective structure, these would have to be considered on a case by case basis to assess their

- ability to continue to operate with an independent legal status;
- the advantages of combining the management of commercial activities; and
- the level of inherent integration there is between the core research institute operations and these other activities.

3.30 Given the shared vision of income diversification and knowledge transfer, the collective structure is likely to be strengthened rather than weakened by the inclusion of the current subsidiary activities.

Table 5: Balance Sheet as at 31 March 2004

	MLURI	Moredun Research Institute	SCRI	SAC	Total
	£000	£000	£000	£000	
Fixed Assets					
Land and Buildings	10,127	94	17,053	37,279	64,553
Other	1,599	2,775	6,638	2,116	13,128
	11,842	2,869	23,691	39,395	77,681
Other assets	116			2,403	2,519
Working capital	(745)	1,305	967	(2,434)	(907)
Long term liabilities	11			5,003	5,014
Provisions			304		304
	11,077	4,174	24,354	34,361	73,966
Represented By:					
Restricted funds	189	218	9,255		9,662
Unrestricted funds	1,487	1,684	698	3,867	7,736
Deferred capital grants	9,401	2,272	14,401	30,494	56,568
	11,077	4,174	24,354	34,361	73,996

Collective Structures – Option Identification

Methodology

4.01 The methodology adopted in identifying and assessing the collective structures considered as part of this review was as follows:

Start up and Mobilisation

4.02 Following the confirmation to proceed we met with the Steering Group on 12 November 2004 to collectively agree our approach to the consultation and detailed methodology. At this mobilisation meeting we agreed project timescales and key meeting dates which were captured in a project plan issued to all Steering Group members.

4.03 At this stage we also agreed that the consultation process, as set out in Stage 2 below, would only include Steering Group members and selected representations from the respective senior management teams of each organisation.

Consultation and Identification of Options

4.04 During this stage we requested relevant information about the existing arrangements within the four bodies which was used to form a baseline understanding from which we could identify and assess future potential structural options for the four bodies.

4.05 This element of our consultation included:-

- Identifying the range of activities undertaken in each of the four bodies through meetings with representatives of each body and by considering supporting information provided, (Section 2).
- Identifying the current links with Higher Education Institutions and other key partner organisations;
- Reviewing the existing governance arrangements within the four bodies;
- Understanding how the activities of the four bodies linked to the strategic objectives of SEERAD.
- Identification of potential collective structural options

Generation of long list of Collective Structures

4.06 A long list of potential structural options was circulated to each Steering Group member, together with a set of perspectives and associated criteria against which we proposed to assess the various advantages and disadvantages of the options relative to each other.

Individual Consultation with the four bodies and SEERAD on long list of options

4.07 Individual meetings were held with the Chief Executives / Directors of each body, representatives from their respective senior management teams and SEERAD. During these meetings the long list of options was discussed and the list reviewed for completeness. Following these discussions a revised list of options was compiled based on this initial consultation process.

4.08 In developing the options identified for the future structure of the four bodies, we believe that cognisance was taken of the views and opinions of SEERAD and the four bodies in terms of the impact that these options would potentially have on the organisations and their ability to meet the requirements set out in the SEERAD strategy. This process of consultation resulted in the production of a revised long list of potential collective structures

Table 1: Revised long list of Collective Structures

<ul style="list-style-type: none">• Full merger of all four organisations and establishment of a new Board of Management
<ul style="list-style-type: none">• Merger of the three SABRIs only (excluding SAC)
<ul style="list-style-type: none">• Merger of two or more bodies (not necessarily all four)
<ul style="list-style-type: none">• Four bodies transferred into one university (or universities)
<ul style="list-style-type: none">• Strategic partnership between four bodies and university (or universities)
<ul style="list-style-type: none">• Strategic partnership between some of the four bodies (and ACES & EBRC) and redefinition of key roles and research remits within four bodies.
<ul style="list-style-type: none">• Establishment of a holding company to enable sharing of central functions. All existing bodies to retain their existing Boards and governance arrangements.
<ul style="list-style-type: none">• Retain existing organisational structures (with some rationalisation of functions) but with increased links and activities
<ul style="list-style-type: none">• Status Quo

Workshop to identify preferred shortlist of options

- 4.09 On the 29th November each of the four bodies and SEERAD were represented at a facilitated workshop by 2 persons from each organisation. The objective of this workshop was to reduce the long list of options down to a shortlist of preferred options.
- 4.10 In order to set the context for the workshop an initial session was undertaken to establish the key factors that would need to be considered as part of the development of any revised collective structure(s).
- 4.11 This enabled the Steering Group to identify an outline vision based on jointly agreed strategic aspirations for a new collective structure.

- Increased International recognition for contribution in each of the areas of animal bio-science, environmental and plant related research, which will have enhanced impact in a world wide context
- Promotion and enhancement of research excellence
- Deliver scientific research that is strategically relevant to Scottish Minister's policy, legislative and enforcement functions
- Increase in customer base, enhanced focus on end user relevance and diversification of funding sources
- Achievement of sustainable critical mass and increase in multi-disciplinary working
- Ability to attract sufficient funding to invest in new technologies and meet the challenge of increasing regulation and external competition
- Capitalising on growth in investment in industrial bio-technology research and development
- Increase links with other complimentary research and development organisations and Universities
- Ensure that the research base is efficient and effective
- Provision of financially viable and sustainable education, consultancy and knowledge transfer activities

Selection of three short listed options

4.12 Using the agreed joint strategic aspirations and our understanding of the external and end user environment, the long list was reviewed and challenged and the following shortlist of collective structures agreed for further study.

Table 2: Short listed Options

Option 1:	a) Full merger with relocation to single site
	b) Full merger with no relocation
	c) Full merger with no relocation and establishment of a new holding company
	d) New single organisation with no relocation and one organisation opting out
Option 2:	a)Strategic partnership for four bodies – establishment of Centres of Excellence
	b) Partial merger with delineated responsibilities to a new Strategic Board
Option 3:	Four bodies transferred into one or more university

4.13 In compiling the short list of options, there was agreement amongst the Steering Group that the status quo was not a sustainable option. Consequently, the advantages and disadvantages of retaining the existing organisational arrangements were not further considered as part of our consultation.

Consideration of advantages and disadvantages of each option

4.14 To assist in the evaluation of the relative advantages and disadvantages of each option a number of key factors or perspectives were identified in consultation with the Steering Group. As noted in Section 4, these perspectives were subsequently reviewed and prioritised by each body.

Perspective	Success criteria:
SEERAD / government perspective	<p>Contribution to evidence base to support coherent policy development within SEERAD.</p> <p>Impact of the collective structure as an asset for Scotland.</p> <p>Fit with science and education base of Scotland.</p>
Finance and viability perspective	<p>Costs of structures and processes are met or exceeded by income.</p> <p>Ability to reinvest in sustainability of organisation.</p> <p>Generation and exploitation of products and services, with opportunities for growth from:-science, consultancy and education</p>
Level of complexity/ease of transition perspective.	<p>Strategic links with external stakeholders secured through period of change</p> <p>Change management processes internally are robust and effective</p> <p>Implementation of robust governance arrangements through change period</p>
Customer perspective	<p>Research relevant to customers' needs.</p> <p>Consultancy relevant to customers' needs.</p> <p>Education relevant to customers' needs.</p> <p>Excellence of science internationally.</p> <p>Products and services available at acceptable quality, cost and quantity.</p>
Internal process perspective	<p>Scientific focus to ensure impact.</p> <p>Opportunities for beneficial collaboration.</p> <p>Efficient and effective management.</p> <p>Efficient provision of education and training.</p> <p>Efficient consultancy.</p>
Governance	<p>Implementation of robust and effective governance arrangements</p>
People learning and development perspective	<p>Attract motivate and retain scientific staff.</p> <p>Attract, motivate and retain management and administrative staff.</p> <p>Able to share knowledge across disciplines and work in multi-disciplinary teams.</p>

Detailed descriptions of the perspectives and their underlying success criteria are provided at Appendix II.

Collective Structures – Appraisal

Approach to evaluation of Advantages and Disadvantages of identified Options

- 5.01 During the course of the consultancy a very rigorous and thorough discussion of the potential options was undertaken as outlined in the previous section.
- 5.02 In assessing the advantages and disadvantages of each option we have taken into consideration the following:-
- The key objectives of the SEERAD strategy namely:-
 - Relevant Research;
 - Knowledge transfer and exploitation; and
 - Sustainability of the SEERAD research base.
 - The activities of the four sponsored bodies through consultation with the Heads of those bodies;
 - The existing links that each body has with the higher education sector and the plans for enhancing and growing these links in the future;
 - The proposal to procure future research needs through multi and inter disciplinary managed programmes and to understand the importance of knowledge transfer within these programmes to support SEERAD's strategic objectives;
 - The existing constitutional arrangements for the four bodies through discussion with the heads of the bodies and the potential impact these will have on any proposed new organisation(s);
 - Our knowledge and expertise of working on similar projects to reflect on what structures and models exists else where in the UK and the impact of these structures on the potential for the sharing of functions and the associated costs implications.
 - In determining the advantages and disadvantages of each option cognisance has also been taken of the views and opinions of the four bodies and of SEERAD. The status quo is accepted as no longer being sustainable by all four bodies and so this is used as a benchmark when reviewing the benefits and risks of each option.
- 5.03 The above factors enabled a number of perspectives (and supporting success criteria) to be developed in consultation with the Steering Group, as set out in the previous section. These perspectives have been used to qualitatively consider the advantages and disadvantages of each option.

Evaluating the Options

5.04 For each of the 3 main options the following have been presented in further detail in the remainder of this section:

- A diagram and description of the proposed collective structure.
- The key assumptions underpinning the move towards the proposed structure.
- The advantages, disadvantages and the risks associated with each option.
- Evaluation of the option compared to the success criteria within each of the perspectives.

Ranking of the perspectives

5.05 In order to assess the relative merits of each of the perspectives agreed with the Steering Group, the four bodies and SEERAD were asked to rank the perspectives.

Table 1: Ranking of perspectives

Perspective	Ranking of perspective					Avg Score
	SEERAD	MLURI	MRI	SAC	SCRI	
SEERAD/government	2	1	3	4	2	2.4
Finance and viability	1	2	2	1	1	1.4
Level of complexity/ease of transition	4	7	7	7	7	6.4
Customers'	3	2	1	3	3	2.4
Internal process	5	5	5	2	6	4.6
Governance	6	6	4	5	4	5.0
Staff learning and development	7	4	6	6	5	5.6

5.06 The results of the ranking highlight a level of consistency between the four bodies and SEERAD in terms of their requirements from any proposed new collective structure. Foremost is the need for financial sustainability, which was a key driver for the four bodies and SEERAD undertaking this consultancy. The SEERAD and customer perspectives were ranked next in terms of importance, reflecting the continued key role that the SABRIs and SAC will have in delivering policy relevant research and contributing to the science and technology base in Scotland. The ranking of the perspectives in this order also reflects the importance upon ensuring that clear and accountable lines of reporting are in place in any collective structure.

Whilst there was apparent deviation in the scoring of the internal process perspective, it was noted that SAC scored this more highly due to their prior experience of bringing together three organisations, their recent internal re-organisation and the significance of the impact that this perspective had on achieving efficiencies and implementation of business processes to support the delivery of strategic objectives.

We would further highlight that the level of prioritisation allocated to the transition perspective indicates the high level of commitment each of the organisations has to overcoming any potential barriers to moving from their current position to any new collective structure. We believe that securing this commitment has been an integral element of the consultancy process.

Full merger Option 1 (incorporating four separate options)

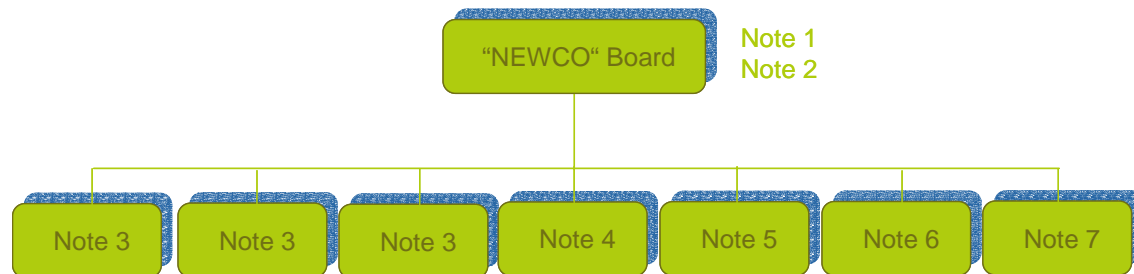
5.07 Because Options 1a, b, c and d are all variations of a merged collective structure, the following paragraphs describe each of these options initially prior to setting out the advantages and disadvantages.

Note: None of the options in 1 would preclude the establishment of the respective Centres of Excellence described in Appendix IV.

Option 1a: Full merger with relocation

5.08 **Description:** Single new organisation, dissolution of existing bodies, re-location on single site.

Collective Structure:



Notes

Note 1: Newly appointed single board

Note 2: Single unified Management Team

Note 3: Establishment of three new research divisions aligned to each of the SEERAD programme areas

Note 4: A Consultancy Division based primarily on the SAC consultancy activity focused on development of advisory activities

Note 5: An Education Division based on the services currently led by SAC

Note 6: As above but for Veterinary Surveillance Services

Note 7: A support service function (e.g. finance, administration, estates, information technology)

Description of 1a)

This proposal for a collective structure is the most radical of all and entails a full merger of the four bodies and relocation to a single site. The existing Boards of the current organisations would be dissolved and a new single Board appointed. A single unified management team

would also be appointed and a divisional structure organised along the following lines:

- Three main divisions would be set up to cover the animal, plant and environmental research programmes.
- Separate operating divisions covering consultancy and advisory services (incorporating SAC's consulting activities) and the education and veterinary surveillance services of SAC.

In dissolving the existing bodies, it would be for each Board to consider the options for transferring these to the new collective structure or retaining their current subsidiary or commercial companies as separate legal entities.

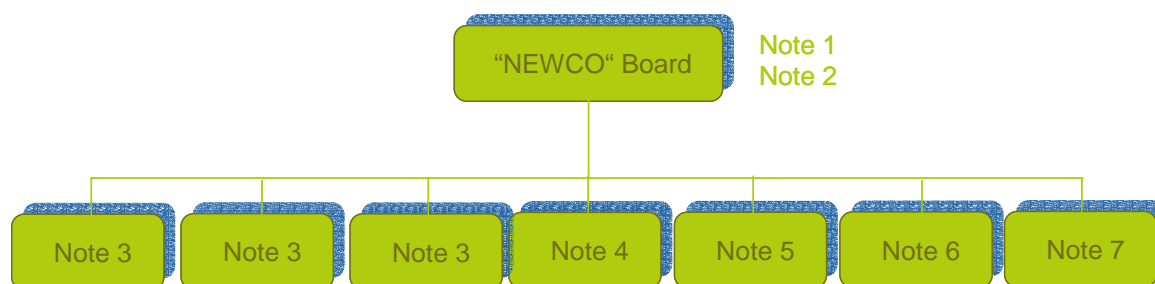
Key assumptions in moving towards option 1a.

- All existing Boards of Management would be dissolved and replaced by a new single Board of Management.
- A Chief Executive / Director and senior management team would be appointed.
- Surplus assets would need to be realised - land, buildings and equipment.
- The move towards a single site would involve a new build or a refurbishment of an existing site.
- There would be shutdown and termination costs of discontinuing operations on particular sites.
- There would be a transition period that would span years rather than months to account for planning, development and new build timescales.
- There would be the potential to make efficiency savings in staff costs mainly around the areas of senior management and in administration through centralisation of resources (sharing of services).
- There would be a requirement for investment in integrating information systems.
- There would be redundancies throughout the four bodies most likely at all levels.

5.09 Option 1b: Full merger with no relocation

Description: Single new organisation, dissolution of existing bodies, no re-location.

Collective Structure:



Notes

Note 1: Newly appointed single board

Note 2: Single unified Management Team

Note 3: Establishment of three new operating divisions aligned to each of the SEERAD programme areas

Note 4: A Consultancy Division based primarily on the SAC consultancy activity focused on development of advisory activities

Note 5: An Education Division based on the services currently led by SAC

Note 6: As above but for Veterinary Surveillance Services

Note 7: A support service function (e.g. finance, administration, estates, information technology)

Description of 1b)

This option is similar to option 1a apart from not relocating to a single site.

The merged organisation would retain the existing sites and a new Board would be appointed after dissolving the existing Boards. A new management structure would also need to be established, replacing the existing management arrangements.

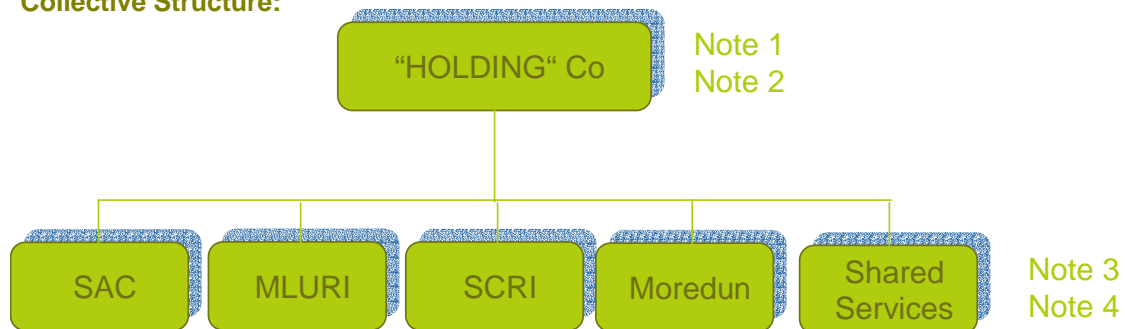
Key assumptions in moving towards option 1b.

- All Boards of would be dissolved and replaced by a new single Board.
- A Chief Executive / Director and senior management team would be appointed.
- Certain services could be centralised but to a lesser degree than relocating to a single site.
- Redundancies would be necessary mainly in senior management and in the services that could be potentially shared.
- It would be advantageous to locate the key programme areas of research at particular sites in order to achieve the most effective level of activity and critical mass on each site.

5.10 Option 1c: Full merger with no relocation and new holding company

Description: A new holding company would be established. Existing bodies identities would be retained but dissolution of existing Boards would take place. There would be no re-location and a new division would be set up to host shared support services.

Collective Structure:



Notes

Note 1: Newly appointed single Board

Note 2: A Group Chief Executive and Group Management Team established

Note 3: Subsidiary bodies each would retain Management Teams but no Boards

Note 4: A newly formed division would host the support services functions

Description of 1c)

This option involves dissolving the Boards of the four bodies and replacing them with a new single unitary Board. A Group Chief Executive would be appointed and a new group management team established to support the strategic direction and leadership of the new merged organisation.

The existing four bodies would become related or subsidiary operations of the holding company and would retain their existing senior management teams during the transition period until the new management structure was agreed. A separate division would take on responsibility for hosting all the support services.

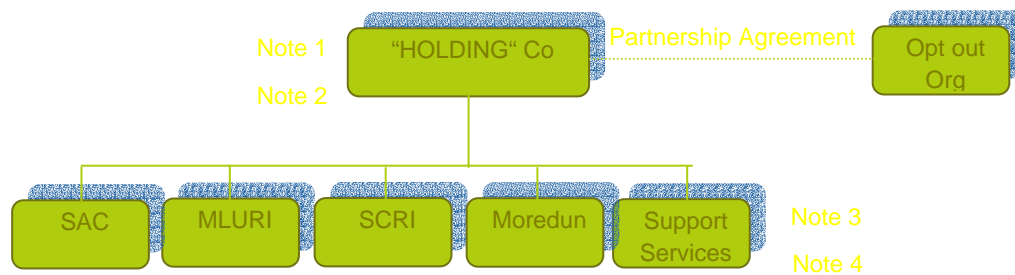
Key assumptions in moving towards option 1c.

- All Boards would be dissolved and replaced by a new single Board in the new holding company.
- A Chief Executive / Director would be appointed and supporting senior management team set up.
- Management teams in the existing organisations would remain initially but would be revised to reflect the new group structure and revised governance arrangements.
- Current operations at existing sites would remain.
- Staff redundancies would take place.
- A new division would be established to host support services. This division would reside within the holding company legal structure.

5.11 Option 1d: New single organisation with no relocation and one organisation opting out (four possible outcomes)

Description: A new holding company would be established. Existing bodies would be retained but dissolution of existing boards would take place. There would be no re-location and a new division would be set up to host shared support services. One organisation opts out under this option.

Collective Structure:



Notes

Note 1: Newly appointed single Board

Note 2: A group Chief Executive and supporting Management Team established

Note 3: Subsidiary bodies each would retain Management Teams but no Boards (one of the three bodies would opt out)

Note 4: A newly formed division would host the support services functions

Description of 1d)

There are four possible permutations of option 1d which include one of the bodies opting out of the new collective structure.

The other three remaining bodies would merge as in the case of option 1c and would retain their existing sites. The Boards of the three bodies would be dissolved and replaced with a single new Board.

The opt-out body would continue with its existing arrangements and may formally establish a partnership agreement with the new collective structure.

Key assumptions in moving towards option 1d.

- The Board of the opt out body would remain and continue to have governance responsibilities.
- The Boards of the remaining three bodies would be dissolved and replaced by a new single board.
- The three bodies in the new collective structure would continue to use their existing sites.
- There would most likely be redundancies in the merged bodies.
- A new division would be established to host support services. This division would reside within the holding company legal structure. The opt out body would have the facility to transfer support services into this division.

Advantages and Disadvantages of full merger

5.12 The following advantages and disadvantages would apply to each of the Option One variants unless specifically highlighted below:

Advantages of full merger for options 1a, b, c & d

- ✓ Opportunity to build a coherent vision and strategy for a single organisation with a single Board
- ✓ Establishment of a robust governance structure and decision making process with clear accountabilities and responsibilities.
- ✓ Single internal process for determining the allocation of funds to the key research programmes.
- ✓ Ability to pool resources to share services effectively such as IT, administration, HR, finance and laboratory services.
- ✓ Coordination of knowledge transfer and diversification of funding sources and commercial activity
- ✓ Potential to have enhanced staff and student facilities because of economies of scale
- ✓ Increased breadth and capacity to compete more effectively in securing research funding – this would however be dependent on the new merged organisation achieving the required levels of research excellence and reputation both nationally and internationally.
- ✓ More flexibility and capacity to align resources and facilities to support research activities
- ✓ Value for money – efficiency in operation

Disadvantages of full merger for options 1a, b, c & d

- ✗ Finding a suitable site at affordable costs (for 1a only)
- ✗ Geographical sensitivities (mainly for 1a)
- ✗ Variation of staff terms and conditions in new organisation
- ✗ Prospect of redundancies
- ✗ Re-location costs and associated staff issues (e.g. staff travel distance, staff loss) - (for 1a only)
- ✗ Locating on a single site may have implications in terms of delivering local services (for 1a only)
- ✗ Loss of staff morale during the transition phase – potential loss of key staff
- ✗ Loss of identity of four bodies within new organisation
- ✗ Timescale for new build or refurbishment (realisation of existing assets) - (for 1a only)
- ✗ Implementation costs i.e. shutdown costs and transfer of assets and liabilities
- ✗ Cost of integration of IT systems

Apparent Risks for full merger for options 1a, b, c & d

- Timescales for any refurbishment or new build running over schedule and budget (for 1a only)
- Disengagement of key senior staff and certain stakeholders through the transition period
- Ensuring staff are included in the process and not excluded and hence disengaged
- Gaining support of existing staff for the merger
- Uncertainties in future funding
- Loss of stakeholder support due to the perceived loss of links with the four bodies and associations with their identities and what they stand for
- Level of effort required during transition could cause loss of focus in research and commercial activities
- Four bodies all have differing scales of operation and potential exists for a less than equitable merger
- Resistance to the transition process resulting in lower performance levels
- New organisation inheriting weak areas from existing four bodies and hence causing implementation difficulties
- System integration problems and associated implementation costs
- Success will be dependant on finding appropriate staff with the necessary skills and experience to manage the transition phase
- Timescales involved for discussions with interested parties and Trade Unions
- Difficulties which can arise when managing an organisation over distributed sites

Evaluation of Options 1a – d in relation to impact upon the agreed key perspectives

- 5.13 In the following paragraphs Options 1 (a-d) are evaluated in relation to the each of the perspectives highlighted previously:-

Finance and Viability Perspective

- 5.14 Securing a position of financial sustainability within any new collective structure was deemed to be critical to all the respective bodies. Each of the alternatives under Option 1 would provide potential for the achievement of enhanced financial resilience and efficiency savings in terms of costs and improved asset utilisation. Under a single Board and senior management team, the ability to make decisions in terms of resource allocation and asset utilisation and investment could be undertaken in an environment unencumbered by the organisational and legal boundaries which affect the current independent structures of the four bodies. However, simply merging the financial resources of the existing organisations in itself will not achieve a significant improvement in financial security.

Medium to long term sustainability would be dependent on the ability of the new merged organisation to achieve the levels of research excellence and recognition required to diversify its income sources and customer base and increase the scope to capitalise on knowledge transfer through commercialisation of the scientific research and development. Furthermore, the merged structure may be able through increased financial strength and profile to access alternative sources of funding to invest in the development of the infrastructure. As noted earlier SEERAD capital funding in itself will be insufficient to support the levels of investment required to compete in the global market and the biotechnology sector. Within a merged organisation, it maybe possible to consider funding models such as private / public partnerships to secure long term infrastructure investment. Although there is no reason why any of the bodies could not consider this model now, the scale of operation may play a factor in this respect.

It is further recognised that under Option 1a, the investment required to achieve a full

relocation of all four bodies to a single site would be significant and require to be underpinned by a full cost and economic analysis. Such an evaluation was not undertaken as part of this consultancy exercise.

SEERAD/Government Perspective

- 5.15 This perspective is viewed as important in meeting the requirement to provide policy relevant research outputs for SEERAD in the future. The newly formed Board and management team would have to provide the necessary leadership and direction required to achieve a greater coordination and alignment of research efforts than is currently possible between the separate Research Institutes and SAC. Whilst recognising the distinct contribution made by the research institutions to the science base, the bodies need to be capable of responding to the potential for increased competitiveness for SEERAD funds and ensuring that the scientific and technical knowledge base established thus far is not eroded through a failure to maximise the efficiency of the management of the overall programme of research activity being undertaken.

As the strategic planning and leadership would be provided by a single Board and senior management it would eliminate the need for SEERAD to negotiate funding settlements with separate bodies. A single integrated research strategy would be determined by the new Board which would be responsible for setting the research priorities and working with management to align research programmes consistent with government policy initiatives and the funding secured from SEERAD.

Furthermore, with the removal of existing organisational boundaries the activities of the reformed research divisions could be focused more directly towards the managed programmes of research within the SEERAD strategy.

The new merged structure would also recognise the importance of the other government funded services relating to education provision, support to disadvantaged areas and communities, routine testing and veterinary surveillance services. We believe that these services if properly integrated and robustly managed, with underpinning financial plans, would enhance the overall strength of the combined organisation.

This process of change would however require to be robustly managed to ensure that the strengths of the existing organisations were secured and that any transfer of resources from the current organisations to the new merged structure did not disrupt the continued provision of policy relevant research and existing research programmes. We would envisage transitional arrangements being established whereby continuity of existing activities was initially secured and sufficient time given to embed the new Board and senior management structure, prior to establishing the optimum organisational structure required to support the strategic plans of the merged body.

Customers' perspective

- 5.16 Whilst, it is recognised that achievement of the necessary international recognition and research excellence required to widen the customer bases is not necessarily directly related to the size of the organisation, the ability to secure access to alternative sources of funding maybe enhanced through the greater critical financial mass that the combined organisation could achieve.

There will be the need to secure the continued commitment of existing key customers towards the new merged structure to ensure that existing strategic relationships are protected and strengthened. All of the options have the potential to fulfil and further develop the needs of stakeholders within key research programmes areas and also to accommodate the development of other activities by careful structuring of the divisions within the merged

structure.

Internal Process Perspective

- 5.17 Integration of operational and business processes and harmonisation of systems will be necessary to provide optimum efficiency and effectiveness. The challenge and cost of integration of key business processes and systems should not be under-estimated and is likely to take several years to secure.

A challenge that the new merged organisation would face is addressing or giving due recognition to the differing staff conditions and terms. This affects all levels and types of staff and will be a particular issue where staff are re-aligned and re-positioned within the new merged structure. However, a single board of management would have the advantage of being able to address this issue uniformly across all staff in the organisation with a view to ensuring that the organisation was competitive in the marketplace. A larger organisation would undoubtedly have a more diverse resource to draw upon and would most likely be able to respond flexibly and quickly to fluctuations in the marketplace.

All of the above will present a significant challenge to the senior management team, particularly given the increased diversity of activities combined in the new structure. Such a challenge is not insurmountable and barriers can be overcome through strong leadership at senior levels and an agreed commitment to the overall strategic plans and direction for the merged business.

Governance perspective

- 5.18 All of the Options 1a to 1d present benefits in terms of this perspective for operational and strategic reasons and would facilitate the establishment of clear and timely decision making processes.

Within single structure clarity in the decision making process could be most effectively enhanced within options 1a and b. Under options 1c and d with the retention of existing divisions which mirror the pre-merger set-up, careful management of activities in the merged structure would be required to ensure that the divisions operated in a corporate manner aligned to the overall organisational strategy to avoid any 'silos' forming between divisions.

Staff learning and development perspective

- 5.19 The full merger of the four bodies, or in the case of option 1d the merger of three bodies, provides a significant opportunity for enhanced sharing of ideas and learning through closer links than could be achieved between four independently constituted bodies.

Under the revised organisational structure multi and inter-disciplinary teams would be formally aligned to the SEERAD programmes of managed research. There would also be efficiency gains within the learning and development function which will be derived from the reduced

overhead of providing a service for a larger organisation.

Level of complexity/ease of transition perspective

- 5.20 This perspective was seen as one which although extremely important would not be a key factor in determining whether an option was ranked highly or not.

The most complex option for implementation would be a full merger with relocation to a single site. The likely issues around disposal of existing estate and the lengthy ensuing transition period would mean this option would be rated very low with regard to this perspective. The options which involve no relocation would consequently rate more favourably as the issue of the addressing the dispersity of estate would be less of a factor in the short term.

In the following paragraphs we have also highlighted a number of the salient features for each of the Option One alternatives.

Discussion of Options 1a, b, c and d

Option 1a

- 5.21 The 'big bang' approach assumed under this option has the advantage of a significant strategic shift and move towards a single integrated organisation on a single site. Given the widespread location of the four bodies and the timescales involved in realising assets it is unlikely that a rapid merger of the four bodies on a single site could however take place. There are significant issues around the geography of the four bodies. Many excellent links have been made with organisations in each locality which would be potentially lost by this single site option.

A transitional move towards a full merger on a single site would involve significant detailed planning around the change in estate and relocation of staff.

Factors which would influence the achievability or desirability of this option include:

- the external pressure on SAC to continue to provide education across a number of sites
- the recent acquisition of new land and buildings by the Moredun Foundation and
- the importance of the current links with universities and other key stakeholders in each of the existing locations.

Option 1b

- 5.22 This collective structure has the principle advantage of being significantly less complex for implementation purposes than a full relocation.

One of the key risks with option 1b would be managing the integration of different organisational cultures within the new collective structure whilst operating at multiple sites. This can often result in potential 'silos' forming because of the geography and the locations of the sites. Staff will often want to align themselves with the 'old' organisations and this is reinforced when no physical change in location takes place during a merger. To contrast this it would be possible to consider some degree of staff rationalisation by moving staff between sites.

If existing sites were retained it would be a requirement for the new Board and senior management team to create an environment in which real change has taken place. This will require strong leadership and direction throughout the change process in order for the new vision and identity to be cascaded down to all parts of the organisation. A key advantage of this option is that it will facilitate the creation of distinct divisions through which different aspects of the combined business could be delivered effectively. With three divisions focused specifically on each of the SEERAD managed programmes there is potential to further enhance the research capability and skills of the existing bodies through achievement of critical mass and the drawing together of staff who have a shared focus in delivering research relevant to SEERAD's strategy.

The creation of separate divisions focused on other activities such as commercial operations, education and veterinary surveillance services will ensure that there is distinct accountability for such elements and that plans are developed to ensure that these activities can be financially self sustaining.

For this option it is quite likely that there would be better staff morale than under Option 1a due to less upheaval and disruption in terms of work locations. On the down side operating on multiple sites may not provide significant levels of efficiency savings within the support services.

This option still offers some opportunity to rationalise estate even though it would be based on a number of different sites.

Option 1c

- 5.23 This option allows the identity of the existing bodies to remain relatively unchanged and for a new holding company to be established with responsibility for key strategic leadership and decision making. Compared to existing arrangements this would have the advantage of having a single Board and Management Team (covering the activities of all four bodies) with responsibility for determining the strategic direction and allocation of funding between the different operational activities. This would assist in removing any competition and duplication that may exist currently.

Maintaining the identity of the four bodies may assist in securing continued support from existing stakeholder groups and maintaining staff morale in the new structure. In terms of the longer term benefits a critical analysis would need to be undertaken to assess the importance and value of the current organisational "brands" in terms of reputation nationally and internationally. A further advantage of this option is that it would allow the four divisions to be operated as separate 'accountable' bodies and for the performance of each of the subsidiary operations to be transparent.

One of the main drawbacks however is the limitations on the level of integration that would take place between the four bodies. Although unified by a single Board and new management team, retaining existing identities could hinder the move towards inter and multidisciplinary working. This may result in staff at an operational level continuing to work in existing ways because they may not perceive any significant change taking place. This is a factor in all the options which retain existing sites but would manifest more in this merger option.

Option 1d

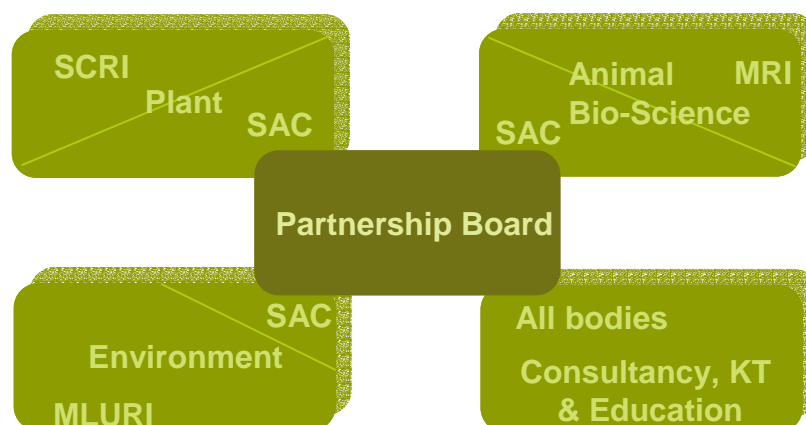
5.24 This option presents many of the advantages of the full merger option in 1c, but to a lesser degree. It has four variations with each one of the bodies opting out in turn. The effect of one of the organisations opting out will undoubtedly lead to a less effective organisation in terms of the breadth of expertise within the Collective Structure. The management of the resources would be more effective and easier to coordinate if the four bodies were under the leadership of a single Board.

One further disadvantage of this option is the potential effect it will have on the body that opts out. In terms of long term financial sustainability the body will likely not reap the benefits of the merged bodies in terms of the potential for cost savings associated with the merger. It will almost certainly make it more difficult to secure the potential to work in a more inter and multidisciplinary manner.

Option 2a: Strategic partnership for four bodies

- 5.25 **Description:** Establishment of a new Strategic Partnership Board, maintain existing bodies and boards, no re-location.

Collective Structure:



Notes

- Note 1:** Newly appointed Strategic Partnership Board with representation from all bodies

Description of option 2a

The Boards and Management teams in all the four bodies will remain in place and will continue operating on their existing sites. Within the framework of the strategic partnership a Partnership Board would be established to co-ordinate the activities of the four bodies. It is envisaged that the Partnership Board would have representation from each of the four bodies (in the form of the existing Chairpersons), supplemented by the appointment of up to three new independent non-executive members one of whom would be appointed Partnership Board chairperson.

The remit of the Partnership Board in this option is important as it has the potential to add an enhanced decision making function to assist in the coordination of the research efforts between the four bodies. The key role of the Partnership Board would be to facilitate the:-

- Agreement of common objectives between the four bodies
- Production of an integrated science plan for the four bodies
- Promote the work of the four bodies to secure international recognition for research excellence.

- Oversee the commissioning of work to support the integrated science plan, including reaching agreement with the individual Boards of each body on how resources and assets would be deployed to deliver the programmes of research.
- Embed the Centres of Excellence within an integrated framework which enhances the strengths of the four bodies and their links with key partners and stakeholders.

Description of option 2a (continued)

Whilst there would be no transfer of assets or staff (except under mutual agreement), the Partnership Board would ensure that there was greater collaboration in each of the key areas of:

- Animal Bio-Science
- Plant Science
- Environmental Science
- Consultancy and Advisory Services
- Knowledge Transfer
- Education

The strategic partnership would be underpinned by clearly defined agreements between the Partnership Board and each of the four bodies. The work of the existing Boards would be more focused on the implementation of science strategies in their respective area of specialism.

The Partnership Board would also ensure that due recognition was given to the importance of other developments being pursued by each of the four bodies; namely:-

- SCRI potentially linked into Plant Science Scotland
- MLURI potentially linked into the Aberdeen Centre for Environmental Science
- SAC and the MRI potentially linked into the Edinburgh Bioscience Research Centre

The realignment of specialist areas within Centres of Excellence should eliminate any internal competition and ensure that cross cutting themes are developed and managed more effectively.

Key assumptions in moving towards option 2a.

- The Boards would continue to operate within the existing structures of the four bodies.
- The Senior Management teams would continue to function within the four bodies.
- A Partnership Board would be set up to co-ordinate the activities of the four bodies taking cognisance of the links that any of the bodies may have with particular Centres of Excellence.
- Opportunities to share services within administrative functions and any other appropriate areas would be explored.
- For each research area an independent expert group would be established to challenge the focus and relevance of the research activity and ensure that opportunities to increase

collaboration were maximised (this could be formally recognised through written agreements).

Advantages

- ✓ Would enable progress to be made to a greater and more co-ordinated collaboration of research activity and improve the likelihood of being more successful in securing funding for larger projects by creating greater critical mass through the partnership
- ✓ Less costly in the short term to implement.
- ✓ Would be more appealing to staff because of the lower levels of change involved
- ✓ Could provide efficiency savings through sharing of services if this could be built into the agreements, albeit such savings would be less than under the other options.
- ✓ Through the Centres of Excellence greater links could be developed with Universities
- ✓ The Centres of Excellence could act as a focal point for knowledge transfer and could link into SAC as a potential co-ordinating or lead knowledge transfer vehicle.
- ✓ Could act as a viable interim solution before a full merger took place.
- ✓ Would be acceptable to various stakeholders concerned about retaining the names and identities of the four bodies
- ✓ Transactional costs associated with the change would be lowest under this option

Disadvantages

- × The continued presence of the four boards may offer minimal benefits over the status quo in terms of strategic decision making.
- × This option could involve limited change in terms of how the existing bodies may operate in the future (it is accepted there will a change required in working in partnership within the Centres of Excellence).
- × Strategic direction could be dominated by the existing Boards of the four bodies rather than the Partnership Board.
- × It does not allow the bodies to make the level of cost savings that a full merger or transfer to a University could achieve.
- × May pose operational difficulties around the agreements to 'second' staff between bodies or achieve effective collaborative agreements.
- × The ability to secure funding competitively would not be as easily co-ordinated as in the case of a merged organisation.

Apparent Risks

- The Partnership Board would not have the same accountability and governance responsibilities as a Board of a constituted legal entity.
- The ACES, EBRC and PSS projects may have implementation difficulties which could impact on the effectiveness of the partnership between the four bodies.
- Disagreements (if they occurred) between the Boards of the four bodies could in turn lead to differences, and potentially internal competition between the bodies for research funding.
- If the partnership is not managed effectively then a level of administrative burden could be introduced into the four bodies
- Agreement on an independent chair

Evaluation of Option 2a in relation to impact upon the agreed key perspectives

Overview

- 5.26 One of the key challenges with this option will be to ensure that effective strategic decision making can take place in practice whilst retaining the Boards in the four bodies. Within this option there is a risk that the Partnership Board may not be effective in pooling resources and co-ordinating research activity if any conflicts occur. Therefore there would be a need to have

clear and agreed partnership protocols for conflict resolution.

This option does not offer the level of benefits of the full merger, but it has the advantage of enhancing the science taking place by virtue of its links to the Centres of Excellence. Even without the formation of the Centres of Excellence within this option it still has the potential to offer significant benefits over the current arrangements within and between the four bodies provided real commitment is evident through the formal establishment of the Partnership Board.

Finance and viability perspective

- 5.27 The efficiency and costs savings associated with a full merger or integration within a university through sharing of services or streamlining of management would not be achieved under this option.

Finance and viability perspective (continued)

- 5.28 For this option to improve the financial sustainability of the existing bodies, there would need to be strong commitment through the Partnership Board to ensure factors such as joint strategic planning, co-ordinated asset investment and utilisation and mutually agreed pooling of resources could be achieved without the need for a full merger. This will be particularly challenging given that each of the bodies will retain its existing independent governance and accountability arrangements. It would be essential that the bodies agreed under this option to review support and administrative functions and to set stretching targets for savings in this area. It is our experience that sharing support functions within partnering organisations can achieve recurring savings. Options of different models for sharing of services are highlighted in Appendix III.

If a strategic partnership option was considered feasible we would recommend that consideration is also given to the formal establishment of the partnership within a 'company limited by guarantee'. Whilst no investment is required by the individual bodies, other than to guarantee the debts of the company, it does provide a formal structure and mechanism within which the respective bodies can come together, as well as providing a visible corporate identity to the partnership. The real value of membership of the 'company limited by guarantee' lies in the ability for the respective bodies to exercise voice in a democratic and properly constituted governance environment. This may assist in exposing the Partnership Board to the necessary rigour and pressure that will encourage efficiency and effectiveness.

A further key success factor for a strategic partnership option would be the ability to capitalise on the proposed Centres of Excellence in ACES, EBRC and the PSS and the bodies to work in collaboration with Universities to gain access to Research Council funding.

SEERAD/government perspective

- 5.29 The Partnership Board would be required to have sufficient powers or remit to develop an integrated science plan, by coordinating the activities of the four bodies, which would be clearly aligned to the managed programmes of research defined in the SEERAD strategy and

demonstrate how the sharing of resources would be co-ordinated.

The cross cutting activities and the inter-disciplinary working required to meet the future needs of SEERAD would also have to be demonstrably better served by the enhanced arrangements that could be put in place under a strategic partnership, if this was to be deemed a satisfactory option to pursue.

Customers' perspective

- 5.30 The research outputs for end users (including SEERAD) would have to be enhanced under this option compared to the status quo. There is potential to achieve such reputation enhancement through both the leadership and direction provided by the Partnership Board and association with the Centres of Excellence. It is likely that the needs of customers in the future will require a more multi functional approach to deliver scientific solutions and the concept of a Centre of Excellence with strong and established links to other research orientated organisations would appeal to customers who require an integrated solution.

Working more closely with the Universities through the Centres of Excellence would also derive many of the benefits of bringing the four bodies into the Higher Education research sector which may pay dividends in terms of knowledge transfer and commercialisation of activities. It would also be important to utilise the particular strengths of the four bodies to best effect in the partnership arrangement, particularly in the area of consultancy.

Internal process perspective.

- 5.31 As the four boards will still retain independent decision making powers, the partnership agreement although formal in nature, will fundamentally rely on the good intentions of the four bodies.

There would most likely be enhancements to the process for managing and procuring multi-disciplinary programmes of research but this would rely heavily on agreements to ensure resources were shared and applied effectively between the four bodies. There could also be the continued possibility of duplication of effort unless the four bodies effectively set out to share resources and facilities and dispose of excess requirements through the partnership arrangement.

The potential for savings in sharing of services is still possible but the scale is likely to be significantly less in this arrangement compared to the full merger or university option.

Governance perspective

- 5.32 The robustness of the strategic decision making process within the Partnership Board will be bound by the formal partnership agreement as individual Boards will still have control over their budgets and resources.

As the partnership will be built upon the trust and the genuine commitment of the bodies, this resolve would ultimately be tested in the case of any dispute. Whilst resolution protocols can be developed there would need to be shared commitment that promotion of the vision and objectives agreed with the Partnership Board had priority over the desires and aspirations of any individual body. This would be essential to ensure that there was strong commitment to change where such change was deemed essential to grow and develop the quality and reputation of the research base or any other services provided by the bodies. This will be particularly challenging as there may be situations where individual bodies are required to make adjustments beyond a mutual exchange of resources or assets.

Staff learning and development perspective

5.33 The opportunities for an enhanced environment within the Centres of Excellence will provide opportunities for greater staff interaction and opportunities to work within multidisciplinary teams.

The environment would also enhance shared learning and development which could be established formally within the partnership agreement. This could be an effective way of removing any duplication within the four bodies around the provision of training and learning and development of staff. There would also be some benefits within the Centres of Excellence that mean economies of scale would apply for the organisation of seminars, events and training with staff being co-located.

Level of complexity / ease of transition perspective.

5.34 Of all three options the Strategic Partnership based around the Centres of Excellence model would most likely be the least complex to implement. The main challenges lie in the setting up of the partnership agreements and the adoption of a pragmatic approach to ensuring that the working arrangements within the partnership do actually reap the potential benefits within this option.

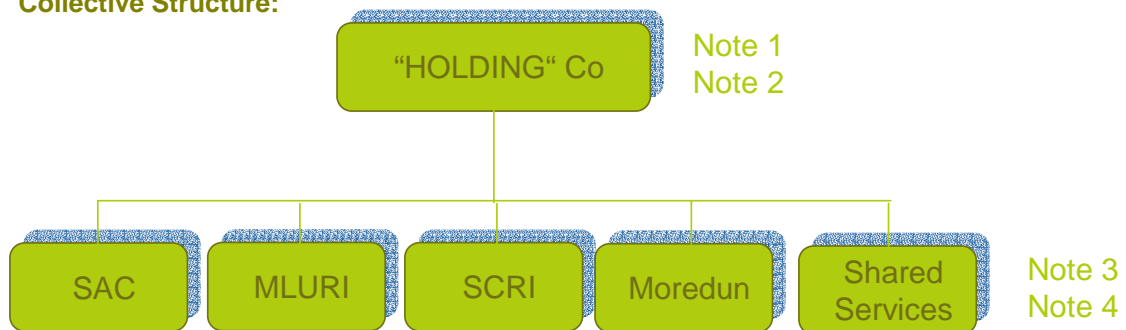
A major drawback with this option is the challenge of securing robust governance arrangements and the potential for no significant or embedded change to take place.

Option 2b: Partial Merger with delineated responsibilities to new Strategic Board within a holding company

5.35 **Description:** A new holding company would be established but existing boards would be retained. Some responsibilities of the existing boards would be passed over to the holding company. No re-location and a new division set up to host shared support services.

Option 2b: Partial Merger with delineated responsibilities to new Strategic Board within a holding company (continued)

Collective Structure:



Notes

Note 1: Newly appointed Strategic Board

Note 2: Bodies each would retain Management Teams and Boards but with revised remits.

Note 3: A newly formed division would host the support services functions and be coordinated by the Strategic Board

Description of 2b)

This option involves establishing a new holding company and appointing a Strategic Board. This would have representation from the four bodies and provision for the appointment of up to three additional non-executives (one of whom would be the chairperson). The four bodies would retain their senior management teams and Boards.

The existing Boards would however be required to pass some of their governance responsibilities to the new Strategic Board. The Boards within the bodies would be responsible for the implementation of the science strategy and the overarching Strategic Board would take on responsibility for development of the overall, science plan for submission to SEERAD and coordination of funding arrangements for the programmes of activity undertaken within the four bodies. It would also oversee the allocation and sharing of resources and efficiency drives within the four bodies and be responsible for setting targets in conjunction with performance.

The nature of the strategic decision making process in this collective structure is complex and the governance arrangements would need to be developed to ensure no conflict of interest.

A separate division would take on responsibility for hosting a support services function. This option would also facilitate the development of the respective Centres of Excellence (as presented in option 2a).

Key assumptions in moving towards option 2b.

- All Boards would be retained but a new Strategic Board would be appointed in the new holding company.
- Up to three new non-executives would be appointed (one of whom would be the chairperson) on the Strategic Board
- Management teams in the existing organisations would remain but could be revised to reflect the new governance arrangements.
- Current operations at existing sites would remain in place, but potential to review these at a future date could be put in place.
- There would be the possibilities of redundancies due to enhanced efficiency of operation (specifically in the area of sharing of services).
- A new division would host the support services. This division would reside within the holding company legal structure. It would be accountable to the Strategic Board and would be responsible for drives to enhance efficiencies within the four bodies.

Advantages

- ✓ This option presents an advantage over the strategic partnership in that it provides an enhancement of the governance arrangements to facilitate decision making.
- ✓ Would enable progress to be made to a greater and more co-ordinated collaboration of research activity and improve the likelihood of being more successful in securing funding for larger projects by creating greater critical mass through partnership
- ✓ Would be more appealing to staff because of the lower levels of change involved
- ✓ Could provide efficiency savings through sharing of services through the shared service division, albeit such savings would be less than under options 1 and 3.
- ✓ Through the Centres of Excellence greater links could be developed with Universities with the strategic board taking account of all existing arrangements and ongoing discussions.
- ✓ The Centres of Excellence could act as a focal point for knowledge transfer and could link well into SAC as a potential co-ordinating or lead knowledge transfer vehicle.
- ✓ Could act as a viable interim solution before a full merger took place.

- ✓ Reassure various stakeholder about the continued existence of the four bodies
- ✓ Ensure key stakeholders would see progress in driving forward efficiency programmes and greater collaboration.

Disadvantages

- × The continued existence of the four boards may impact upon the governance responsibilities of the Strategic Board.
- × This option could involve limited change in terms of how the existing bodies would operate (it is accepted there will a change required in working in partnership within the centres of excellence).
- × Strategic direction could be dominated by the existing Boards of the four bodies rather than the Strategic Board.
- × It does not allow the bodies to make the level of cost savings that a full merger or transfer to a University could achieve.
- × May pose operational difficulties around the agreements to 'second' staff between bodies or achieve effective collaborative agreements.
- × Will be dependent on the cooperation of the four boards of the bodies to transfer some governance to the new Strategic Board

Apparent Risks

- The Strategic Board would not have the same accountability and governance responsibilities as a single Board in a merged organisation, and it will be highly dependent on the consent of the four bodies to be effective.
- The ACES, EBRC and PSS projects may have implementation difficulties which could impact on the effectiveness of the partnership between the four bodies.
- There is potential for an administrative burden to be placed upon the four bodies through its interaction with the Strategic Board.

Evaluation of Option2b in relation to impact upon the agreed key perspectives

Overview

- 5.36 This option was aimed at providing an enhanced version of option 2a. The decision making process in option 2a would rely on a set of agreements to be drawn up which would not affect the existing boards governance arrangements in particular the financial accountabilities. In this option a proposition is put forward which is aimed at transferring some of these accountabilities to a Strategic Board The individual bodies would still be accountable for the use of the funds in terms of managing the budgets, but they would no longer determine how the funds were distributed at a programme level.

Finance and viability perspective

- 5.37 The enhanced coordination under this option would allow for a more rigorous approach to agreeing and highlighting areas where efficiency savings could be made particularly in the sharing of resources and services.

In the longer term this option could pave the way for a fuller integration of the four bodies such as a full merger. In the short to medium term the new Board would have a role in ensuring that key resources and assets were shared where possible, thus securing the benefits of greater collaboration in respect of financial planning and investment decisions.

SEERAD/government perspective

- 5.38 This option would effectively be delegating the award and distribution of research programme funding to the Strategic Board. The Strategic Board would have a key role in developing the strategic direction for delivering policy relevant research within the managed programmes and bringing together the four bodies within an integrated framework to develop a robust science plan. The Boards within the four bodies would be more focused on delivering the science whilst the Strategic Board could drive direction within the collective framework. SEERAD would see change taking place by creating a more collaborative working environment for the procurement and delivery of the science and research being undertaken.

Customers' perspective

- 5.39 Within this option it is likely that customers would see a more integrated approach and greater collaborative working arrangements being put in place. This would likely meet the needs of customers who would be looking for a 'one stop shop' approach for many of the multidisciplinary solutions required in the future. This is highlighted in SEERAD's draft strategy. In the short term customers may be reassured to see the continued existence of the identities of the four bodies and that the new collective structure was progressive in terms of its joint strategic planning.

Governance perspective

- 5.40 The governance arrangements within this option present a potential enhancement over those described in option 2a. Within Option 2b the Strategic Board would need to put in place mechanisms to take the inputs from the four bodies and align the overall strategy in a coherent manner. This is partly resolved by giving the Strategic Board the remit to distribute public funds between the four bodies within the context of the managed programmes of research. The four bodies in retaining their control over the 'type' and 'form' of science to meet the programme objectives will have flexibility over their approach to implement the science plan. There is also scope for commercial activities to be continued to be effectively delivered within the four bodies and for an overarching direction to be provided by the new Strategic Board.

Staff learning and development perspective

- 5.41 This option presents many of the features of option 2a and again would fall short of the benefits that a full merger could offer in terms of coordinating L&D activities.

Level of complexity / ease of transition perspective.

- 5.42 This option would be less complex to implement than options 1 or 3, but would be more complex to implement than Option 2a. This additional level of complexity arises from the need to determine workable and legitimate powers for the Strategic Board whilst ensuring that there are no conflicts of interest within the proposed revised governance arrangements for existing boards. This mainly relates to the composition of the Strategic Board and the members that would sit on it. It also relates to the accountabilities within the existing bodies and the potential impact any transfer of responsibility to the new board would have on these duties.

Option 3: Four bodies transferred into one or more universities

- 5.43 As this option has many variants, it was agreed that this consultation would consider the advantages and disadvantages of this option but without specifying any single University in the case of a transfer of all the bodies to one university. It was the view of the Steering Group that the most likely scenario would be the transfer of the bodies to three or more Universities.

The option of moving to a single University site may be a difficult to achieve both financially and politically.

In considering this option it should be noted that no direct consultation was held with any University.

Description: Undertakings and assets and liabilities transferred to University/Universities – the extent of any transfer and the basis of valuations of assets and liabilities would require to be agreed.

All bodies including boards dissolved.

Governance and management subsumed within the University Structure.

This option would involve assets, liabilities and staff transferring into a University or Universities and the Boards of the four bodies being dissolved.

In dissolving the existing bodies, it would be for each organisation to consider the options for retaining or transferring their current subsidiary or commercial companies.

Key assumptions in moving towards option 3.

- The existing Boards would be dissolved
- Assets and undertakings of the bodies would be transferred into the University(s)
- Governance and management arrangements for the bodies would be transferred to the University(s)

Key assumptions in moving towards option 3 (continued)

Advantages

- ✓ Opportunity to build a coherent vision and strategy for a single organisation
- ✓ Single internal process for determining the allocation of funds to the key research programmes, hence removing internal competition
- ✓ Ability to pool resources to share support services effectively
- ✓ Coordination of knowledge transfer and enhancement of commercial activity to diversify activities
- ✓ Increased breadth and capacity to compete more effectively in securing research funding
- ✓ More flexibility and capacity to align resources and facilities to support research activities

Disadvantages

- ✗ The University sector undertakes high impact research and it is possible that because of the nature of the research undertaken within the bodies that there would be a loss of research focus within that environment
- ✗ The scale of the transfer into the University sector would take a significant effort to plan

and undertake, and it is likely that there would be significant complications around harmonisation of staff terms and conditions and pension arrangements.

- ✘ The loss of identity of the four bodies (although there is the potential to retain names with agreement).
- ✘ The level of redundancies in support staff and administration would likely be high and this may impact on staff morale during the process.
- ✘ Disengagement from stakeholders during the process who may be opposed to such a move

Apparent Risks

- The long viability of the transferred research and other activities would be at risk if they were not financially viable.
- NERC's review of Institutes indicated risks associated with the long term funding of research within the University sector.
- The focus on SAC's education and consultancy within the University sector may change after the transfer because of differing policies within the HE sector.
- Industry sponsors may view the move as not a positive one and see a shift in emphasis in research which could have funding implications.

Evaluation of option in relation to impact upon the agreed key perspectives

Overview

5.44 In assessing this option it is recognised that there have been historic differences in the nature of the research that is undertaken within Universities, whose domain has traditionally been in basic, highly theoretical research compared to the more strategic and applied research undertaken by SAC and the SABRI funded research institutions.

In the case of 'new' research areas such as biotechnology certain commentators would however argue that it is becoming increasingly difficult to distinguish between applied and basic research in these research fields and there is a greater recognition of the value of multi disciplinary working between researchers. Indeed in today's competitive funding environment, research institutions and universities are already directly competing for research resources and funding.

In terms of merger options involving universities there are examples of both successful and problematic transactions. There are also examples where the University has been far more dominant in the process and this has had unbeneficial outcomes as in the case of Wye College and Imperial College (in this example it is important to note that Wye College is a Higher education Institute).

In terms of challenging mergers there are several examples where the merger with a University has resulted in a significant change of focus for the merged institution and reduction of staff numbers e.g. Natural Resources Institute (NRI) in the University of Greenwich and the HRI into Warwick University. The fears amongst the four bodies about staff number reductions are understandable but need to be taken in the context of the financially difficult climate for these bodies at the time of merger, particularly in the case of Horticultural Research International (HRI). In terms of NRI there was a significant reduction in staff numbers following transfer into the University of Greenwich. It is impossible to say how these organisations would have fared if they had not moved into a University setting so a comparison of benefits to the current position is very difficult.

Overview (continued)

To contrast the views of the experiences described above the Beatson Cancer Research Institute has been successful in combining the remits of the Beatson Institute, with the

University of Glasgow. The co-location of the Institute on a shared site with the University of Glasgow has been highly successful, not resulted in the loss of focus for either organisation, been able to attract high quality scientific staff and achieve greater scientific research capabilities through the effective pooling of resources. Overall this example demonstrates a number of benefits for both organisations, particularly in terms of impact and scientific recognition. The analogy that can be drawn here is that the success of the Beatson Cancer Research Institute might be attributed to the continued support of Cancer Research UK. The same could be said of SEERAD's continued support of the four sponsored bodies and the desire of SHEFC to encourage positive collaboration between the SABRIs, SAC and the University sector. Within this example it is important to stress that the staff did not actually transfer into the University but worked in a closer manner to achieve greater mutual benefit. This example does however indicate the benefits and synergies of bringing two organisations together.

There are a number of quite natural alignments that could be viewed as options for the choice of Universities that the bodies could transfer to. The MLURI have close links with the University of Aberdeen (but also historic links with Edinburgh), SCRI has natural connections with Dundee (but also has strong links with both Edinburgh and Glasgow Universities) and MRI has synergies with the Veterinary disciplines of both Glasgow and Edinburgh Universities. Some aspects of SAC's research may also be enhanced by transfer into the University Sector, where links have already been established with a number of Universities across Scotland. The marketplace for education, training and consultancy land base sciences in the EU is one in which growth is predicted and this may be attractive to the University sector. If agreement could be reached, either contractually or through legislation, a transfer to the University sector would not result in a dilution of the specialist nature of the research activities in the four sponsored bodies. Instead through mutual commitment and funding would be developed to an appropriate scale that would present significant opportunities for all parties. The combined size of the four bodies even on a national scale would still be relatively small in the competitive HEI environment in the UK, and with increasing competition from overseas, the University option is one which could offer a viable and potentially sustainable future. This would however be highly dependent upon the future shape of the Research Assessment Exercise and on clear long term agreements between the Universities and the Institutes involved.

Finance and viability perspective

- 5.45 The primary financial considerations required under this option would be reaching agreement under which staff, assets and liabilities would be transferred from the existing bodies to one or more Universities. The negotiations involved in reaching an agreed position will be complex and will likely be comparable to the arrangements implemented in the transfer of organisations from public to private ownership. A key factor in the viability of the transfer would be ensuring that the TUPE process for handling the staff transfer was undertaken in such a manner as to minimise the impact on staff. Further key considerations will include the issue of pension costs and liabilities and how the transfer of capital assets would be funded, without placing a significant debt burden on the University. The latter concern over the transfer of the asset base could be addressed by leasing the land and buildings and significant items of equipment to the University rather than transferring outright ownership (there are some estates issues here surrounding who owns the land and buildings which could have an impact). This would have the advantage of securing the asset base and protecting the existing portfolio. In terms of improved economy and efficiency, the infrastructure and facilities available within the University could provide further opportunities for maximising the utilisation of assets to support the requirements of the research activity within the programmes of research. The Universities would also have a larger inherent pool of resources in terms of administrative support functions and there would be potential for savings which could be re-invested in the research staff and infrastructure base.

Finance and viability perspective (continued)

The scale of operation may mean that a University is also likely to be able to respond quickly to the changing needs of the research programmes and Research Council funding may be available to enhance potential income. This could be seen as a significant advantage in

terms of increasing the breadth and diversity of income sources.

The funding of the education element of SAC is currently provided by SEERAD and the potential for this to be reviewed for funding within SHEFC framework would be possible under the University option.

Compared to the status quo the financial scale and size of the research focused universities in Scotland would place the four bodies in a position of being able to better cope with variations in the research income stream. The current size of each of the four bodies makes them more vulnerable to changes in income and the cost base which impacts directly on the financial sustainability of these organisations. As part of any commitment to transfer research directly into the University setting SEERAD could secure through contract a commitment (and incentive) to continue to further enhance the science base and knowledge transfer capability using the combined international research reputation of the Scottish University Sector and the Institutes. The competitiveness of the Universities within Scotland varies and careful consideration would need to be given as to which Institutes would be considered for transfer to particular Universities in order to gain maximum benefit in terms of international scientific recognition.

SEERAD/government perspective

- 5.46 The University sector has historically operated a different business model to the Institutes and their focus tends to be more on short term, high impact basic research. Currently a key factor in the University research focus is alignment with the needs of the Research Assessment exercise. There is acknowledged concern at present from the four bodies that the potential shift in emphasis following a transfer into the University sector may create a loss of focus and have an impact on the provision of policy relevant and applied outputs for a number of key stakeholders.

To alleviate such concerns, further discussion would need to take place with the various Universities who would be involved to determine how assurances and guarantees, could be secured over the long term to support the provision of research which would be consistent with SEERAD's future requirements and the drive for delivery of policy relevant research. The transfer option may also achieve a greater level of coherence amongst the Scottish research base by virtue of the increased coordination which would almost certainly take place within the University sector, although this would need to be carefully managed between the different Universities to ensure that it was working effectively. Such arrangements could be formalised as part of the funding package agreed with any University and would have the effect of minimising or eliminating any associated risk of 'asset stripping' following merger.

It is important to note that multi-disciplinary working between the Institutes, SAC and University sector could also be achieved through the 'Centre of Excellence' linked to the strategic partnership. (Option 2) It must however be borne out that many of the benefits around the highest ranked perspectives (*i.e.* the finance and viability and SEERAD/Government) would not be achieved to the same extent under the partnership model.

Customers' perspective

- 5.47 The university option is viewed with some trepidation by the four bodies primarily because of the experiences of HRI and NRI at the Universities of Warwick and Greenwich respectively. Many of the key stakeholders of these organisations were highly concerned about the move into the sector which came at a time when both organisations were having funding problems. It must be stressed that in the case of HRI the transfer took place under much distress and the likely outcomes of this may well not be a good comparator for future possible transfers under much healthier financial conditions.

Customers' perspective (continued)

The existing four bodies all have significant backgrounds and histories going back many decades, for this reason many stakeholders are passionate about the future of the bodies and

hold dear the long standing traditions that they have. In making any transition towards the University sector full consultation with stakeholder groups would be essential to ensure that there was no loss of focus or deterioration in research and other service provision.

It would be our view that customers generally would not be concerned within which type of body research was to be undertaken provided it was of high quality, delivered on time and offered value for money. There are certain areas of activity such as long term research and the management of research databases that could be underpinned by public funding, and not transferred into the University in the short term which may provide a more practical and flexible solution in the immediate future.

Internal process perspective

- 5.48 Similar to the full merger, this option would face the challenge of integrating the systems and processes of the four bodies within the university environment. This process of change would also require assimilation of the different cultures and management arrangements and require significant dedicated time and commitment from senior management within the merging university(s). The likely timescales for the bringing together of different organisational cultures can take many years to effect and this would need to be a consideration in planning for change within this option. We do not believe that such an integration challenge is insurmountable.

Governance perspective

- 5.49 The governance arrangements for the four bodies would be subsumed into the Governing Body, Court or Senate and management arrangements of the University. This point creates some concern amongst the four bodies about the ensuing direction that a University would take in the long term.

This issue can only be resolved by undertaking a thorough consultation with the Universities concerned to gain a greater understanding of their position. It is entirely feasible to operate the research model for the bodies within the university sector, provided differences in operational cultures between the University sector and the bodies can be overcome. It will be essential to retain many elements of what made the Institutes and SAC successful.

Staff learning and development perspective

- 5.50 The learning and development infrastructure within the University sectors is well developed in Scotland and the scale of operation would mean that the delivery of learning and development activities would be undertaken in a cost effective manner as the overhead for delivery would be much lower in the larger organisation.

The environment and culture of the University sector would present many opportunities for the staff that transfer across. The nature and type of multi and inter-disciplinary programmes of research mean that the University environment would be an ideal environment for the exchange of ideas and knowledge and the development of staff. The Institutes would be able to bring complementary skills in terms of existing inter-disciplinary working which has already been developed, in some instances with the Universities concerned. The close proximity of a number of different research specialisms and departments could potentially be a spawning ground for ideas. This would be particularly so when staff would be working together in close proximity, where facilities enabled this to happen.

Level of complexity/ease of transition perspective

5.51 The level of complexity is comparable to that of the full merger. The procurement of an integrated science plan under this option would need to be carefully managed if the bodies were to transfer to 3 or more Universities. The process of negotiation of staff transfer and asset and liability valuations would be challenging to complete within short timescales.

There are many issues around staff pensions and the harmonisation of terms and conditions, but these are implementation issues and should not be seen as factors which would negate the feasibility of a particular option. This is accepted by the four bodies and SEERAD.

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The Next steps

- 6.01 This consultancy has undertaken a review of the potential options for future collective structures that SEERAD and the four bodies have determined to be realistic options for the future. No preferred option has been identified at this stage but the relative advantages and disadvantages of a number of proposed collective structures have been assessed.
- 6.02 In determining the way forward it is important for the four bodies to consult with their Boards, staff and where appropriate stakeholders to determine their views around the options that have been identified and to gain a consensus which will enable the development of a plan to achieve greater synergy and collaboration through the establishment of a formal collective structure. In gaining a consensus for the way forward it is important to be pragmatic and realise that certain resistances and blockages will be put forward to oppose some of the suggested options. This process can be managed by actively engaging with staff and stakeholders and having a strategy in place to that end. Indeed, the converse is true and many stakeholder groups will be supportive of certain options which can be identified during the consultation process and used to advantage.
- 6.03 As the unsustainability of the status quo is acknowledged and agreed by SEERAD and the four bodies, the respective Boards have a responsibility to work collectively to both protect and enhance the science base that has been established. With the support and involvement of SEERAD, issues relating to future funding arrangements and addressing liabilities for staff redundancies and pensions can be resolved through the process of change and consideration of a new Modus Operandi.
- 6.04 The ABRG strategy for 2005-2010 provides fresh challenges and new opportunities for the four bodies and we believe that there is a collective desire to find new ways of working that will both respond to and exceed the expectations of SEERAD and the key stakeholders of the respective bodies. At a minimum, any proposed solution must address the success factors set out in this report, in particular:
- Ensuring that a sustainable and viable financial position can be secured which will address the continuing shortfalls of income against increasing salary and scientific running costs particularly in the areas of corporate and support services and increase the potential to attract new sources of research funding. It is particularly important that in all options, including the strategic partnership model, targets are set for the achievement of financial savings and efficiencies which will demonstrate a real desire to maximise asset utilisation, eliminate any over capacity and harmonise corporate support functions through shared service or joint procurement initiatives.
 - Creating the critical mass that will individually enable 'presence' and in a UK and international context that will enhance the recognition of the collective structure for its research excellence.
 - Eliminating any competing research programmes between the four bodies, particularly in the area of animal bio-science.
 - Strengthening formal links with Universities in Scotland and elsewhere in the UK, that will enable the collective structures to work with the sector rather than compete for parts of the current SEERAD research programme, particularly the basic-orientated and applied strategic components.

6.05 We do not underestimate the challenge of identifying the optimal solution but believe that the following action needs to be taken. In considering the way forward, these recommendations have been agreed with the Steering Group and SEERAD.

- The findings of this consultancy will be presented to each Board, together with any other appropriate information required, with a view to understanding their respective position on each of the options in relation to the shared vision and the ranked perspectives agreed with the Steering Group. It would be the responsibility of each Board to determine the level of consultation they require in order to inform their views on the options presented. We would however recommend that a timetable be agreed within which this process can be completed.
- A formal Steering Group consisting of an independent Chair, two further independent members, the Chief Executives / Director and Chairman of each body will be formally established to consider the views of each Board and to resolve any areas where there are significant concerns or potential barriers to progression.
- The Steering Group will be tasked with identifying a preferred way forward regarding the short listed options for consideration by the Boards of the four bodies. We would be delighted to facilitate the identification of a preferred option and assist the Steering Group in this process. Any preferred option for a collective structure(s) that may be apparent from this process would need to meet the success criteria suggested in this report and demonstrate to SEERAD that there was a genuine commitment to develop an integrated and shared research strategy and appropriate governance and structural arrangements to ensure that this could be delivered in an efficient and effective manner. It is paramount that the bodies and SEERAD review and build upon the positive outcomes from the work undertaken on the integrated science plan previously and create a unique and inspiring joint vision for the future of all the four bodies. This vision would then inform the strategy for any collective structure moving forward.
- The preferred option and vision for the collective structure will be presented to each Board and SEERAD for consideration and approval and Project Management arrangements established to facilitate the transition from current status to the agreed option. It is recognised that this may involve agreeing a timetable within which there can be a transition through a number of the options to achieve the optimum outcome.
- Irrespective of which option is selected, each body will commit to reviewing all corporate support service functions with a view to agreeing financial targets for the achievement of cost savings and/or streamlining of services and processes where these are duplicated. In Appendix III we have set out the advantages and disadvantages of a number of 'shared' options.

Appendix I – Joint Strategic Aspirations

Strategy Direction

- Opportunities may exist to explore private funding
- Motivate key staff/retain key staff
- Increase science focus
- Build international reputation/ increase international customers
- Remain providers of choice in Scotland (despite greater competition)
- Focus on higher level challenges, e.g. Habitat reconstruction, public health, new foodstock, medical interface, bio control, co-op disease, predictive biology
- Need to cope with upward pressure on costs of regulation and quality, e.g. Animal Science

Maintaining future sustainability

- Critical mass to compete – i.e. scale is proportionate to ‘deal size’ and ‘deal flow’; able to deploy multi-disciplinary teams; able to win larger programmes
- Fast, high quality delivery.
- Compete with the best
- Simplify in order to achieve efficient and effectiveness in the delivery of science and supporting corporate functions

Competition

- UK University sector competition for R & D contracts in some sectors
- Increasing overseas competition
- Evidence of increased collaboration/linking between providers
- Move to full economic costing would impact on competitors as well

Meeting customer needs

- Uncertainty over future funding, e.g. from new SEERAD strategy
- Addressing implication of changes in the Common Agricultural Policy
- Signs of disinvestment in R&D relating to Animal / Crops in UK, compared to growth internationally
- Growth in UK in ‘White’ Biotech R&D – forecast to be three times size of Pharmaceutical industry by 2010
- Increasing economic imperative to deliver research that delivers benefits that outweigh costs

- Focus on policy needs
- Increased demand for training and education predicted
- SEERAD wants skills developed that complement others especially where this builds on expertise.

Appendix II – Success Criteria

Criteria Description

SEERAD / government perspective

Contribution to evidence base to support coherent policy development within the Scottish Executive (i.e. through key strategic objectives Relevant Research, Knowledge transfer and exploitation and sustainability of research base)

This criteria aims to address the how the future collective structure(s) align to the strategic objectives as set out by SEERAD. Although the existing bodies receive up 60% of their funding from SEERAD, in the future other sources of income may replace some of the SEERAD funding. This indicates that a large proportion of the activities within the collective structure(s) will need to be able to deliver the strategic objectives required by SEERAD.

Impact as an Asset for Scotland

The potential for the collective structure(s) to have an impact on the sector by creating a reputation for excellence in research and by delivering relevant research programmes within required timescales and to budget. Also demonstrating that the outputs from the research programmes meet the needs of stakeholders. This criterion is one which has been discussed widely, in terms of what it means. Our understanding through discussions with SEERAD and the four bodies is that it relates to the long term financial sustainability of any future collective structure(s) and its ability to have impact. Regarding impact – this in effect means the ability to do the type of science required by end users and to inform policy and to be able to compete in a credible manner in the international arena.

Fit with Science and Education Base of Scotland

The level of complementary activity that the structure(s) have in relation to other bodies funded by SHEFC. Having synergy with and being complimentary to the other FE sectors to ensure that maximum benefit be acquired through knowledge sharing The level of alignment of the structure(s) to relevant Government activities and initiatives. This will also relate to areas of synergy and which are complementary.

Finance and viability perspective

Costs of structures and processes are met or exceeded by income

This simply means that the running costs of the organisation(s) are met by the income generated by them. This is about focusing available resources and facilities most effectively. Being aware of the likely shifts in the longer terms scientific demands and how to be best placed to position the collective structure(s) to be best placed to respond.

Opportunities for future income growth are maximised (ability to compete)

Having a coherent strategy which understands future needs and makes best use of internal resources and facilities. Clear understanding of competitors positions in the sector and the need for flexibility to adapt to changing conditions

Finance and viability perspective (continued)

Ability to invest in sustainability of Organisation

Having the capacity to provide investment into the most relevant R&D technology to ensure the type of Science can be undertaken in the most relevant areas. This will invariably have a factor associated with the ability to afford more expensive technology in the future. SEERAD funding for the foreseeable future will be a key source of monies available for capital developments. In terms of other funding this will depend on the general financial health of the structure(s). Scales of economy may apply here when considering how best to get value for money for the investment in facilities e.g. cost per head of staff for recreational and sporting facilities is less when the number of staff using them increases. This again will be driven mainly by the availability of monies, and will relate the structure(s) capacity to invest in appropriate resources, staff and facilities to ensure that all operational aspects of the organisation are supported to maximum effect in the most efficient way.

Generation and exploitation of products and services, with opportunities for growth from:-

- a) science,
- b) consultancy
- c) education as sub-criteria)

The ability to take science and integrate it with technology and take it to market. This links strongly to knowledge management and the manner in which the commercialisation is carried out, i.e. how effective it is.

Level of complexity/ease of transition

- a) External considerations.
- b) Internal considerations.
- c) Governance issues.

Complexity primarily relates to the numbers of specific change that would need to be undertaken in order for the transition to the new organisation to take place. It also relates the amount of effort required to undertake the activities, including planning preparation and transfer. The ease in which the transition or move can occur is driven by many factors including; staff motivation, timescales and level or resource available for the tasks. One of the key considerations of in recommending any collective structure(s) would be to assess the likely views of the respective Boards of Management of the four bodies. The move to any new organisation(s) could be greatly enhanced with the support of the Boards of the four bodies.

Customer perspective

- a) Research relevant to customers' needs.
- b) Consultancy relevant to customers' needs
- c) Education relevant to customers' needs

Ensuring that key stakeholders (e.g. the farming community and land owners, to name but two of many), have access to the relevant products and services. One factor here is about the availability in a particular location. Another factor is about stakeholder awareness of what is available in the different specialisms) Ensuring through market analysis that the most policy relevant and end user relevant activities are researched and that an up to date understanding of key stakeholders needs are available

Customer perspective (continued)

Excellence of Science internationally

Having a reputation for international research excellence will be essential in order to assist with commercialisation of science and to create a renowned collective structure(s) there are also a number of other benefits such as the capacity to attract research funding and scientists of international standing

Products/ services available at acceptable quality, cost and quantity

Of vital importance for growth will be the capacity to develop new scientific products and be a market leader. Being successful in the future in this respect will require an inter and multi-disciplinary approach by the collective structure(s). This is essentially about value for money. If the marketplace is competitive these are the key areas that will dictate success in the marketplace. Demand for the products/services will also need to be created. This is to include an appreciation of the role of SAC's Advisory and Veterinary services as well as the three key research areas.

Internal process perspective

Scientific focus to ensure impact

Any move to a new structure(s) must ensure that scientific focus is not lost and that enhancement of the research activities can take place. Continuing to ensure that the depth and quality of research are maintained will be important to retain and enhance reputation.

Opportunities for beneficial collaboration

The collective structure(s) must be best placed to capitalise on the existing links and networks that they have and a strategy must be in place to grow and develop relevant links in appropriate areas to enhance the collaborations required in the future.

Maximum contribution to objectives can be created from assets

This is about focusing available resources and facilities most effectively. Being aware of the likely shifts in the longer term scientific demands and how to be best placed to position the collective structure(s) to be best placed to respond.

Efficient and effective management

The quality of leadership will deliver many of the above and will also have a greater chance of delivering the objectives of the collective structure(s). An open form of management style would foster an environment of trust which would be more effective in gaining support from staff.

Efficient provision of education and training

The provision of Education and Training to this key group of stakeholders will be important to ensuring that the industry has up to date and relevant programmes of learning to maintain and develop skill levels within the sector.

Efficient consultancy

Ensuring that knowledge is transferred effectively within the key programmes of research and beneficially between different programmes of research. That other Scottish Executive funded projects are complimented by the funded work of SEERAD to ensure that knowledge is effectively shared between the relevant groups.

Governance perspective

Effectiveness of Board

This factor will obviously depend on the make up of the Board but will be about how well the new board(s) work well together and the effectiveness of the decision making process. This will be a factor when there is more than one Board present i.e. in the case of a strategic partnership. The level of agreement to an agreed strategic direction will be highly dependent on the number of individuals involved and to which boards they are members.

Staff learning and development perspective.

Attract motivate and retain scientific staff.

Quality of leadership and working environment are key here. The ability to offer attractive packages at market rates and for good career development opportunities are vital.

Attract, motivate and retain management and administrative staff

This links closely again to the quality and consistency of leadership and the ability of the collective structure(s) to value the contribution that all staff make towards its success. The environment here plays an important part and the level of buy-in that staff have to the vision of the new organisation(s) is important. In the case of some of the options the working location will have a key part to play in terms of the required level of travel to and from work.

Able to share knowledge across disciplines and work in multi-disciplinary teams

This will be highly dependent on locations and the effectiveness of the communications taking place. Sharing knowledge and working in multidisciplinary teams is undoubtedly more effective (and economical) when this takes place over a more concentrated geography.

Appendix III – Examples of Shared Service

The disadvantages and advantages of a number of service delivery models for corporate support services are outlined below:

Joint Procurement

Joint procurement is the joint tendering process which includes contract management, preparation of supplier lists and tender evaluation.

Advantages	Disadvantages
<ul style="list-style-type: none"> • Already a well established mechanism for procurement 	<ul style="list-style-type: none"> • Use is restricted to procurement and does not normally involve delivery
<ul style="list-style-type: none"> • Increased bargaining power meaning that economies of scale can be achieved 	<ul style="list-style-type: none"> • Mainly restricted to commodity type purchases
<ul style="list-style-type: none"> • Provides other services such as training 	<ul style="list-style-type: none"> • Lack of formality in arrangements
<ul style="list-style-type: none"> • Can be straightforward to develop 	

Collaboration

Collaboration involves the sharing of information, knowledge and support between the bodies without any commitment to escalating the collaboration onto a more formal footing.

Advantages	Disadvantages
1. Useful vehicle for knowledge transfer between the four bodies	2. Not necessarily formally constituted or managed
3. Can be stepping stone to more formal working	4. Does not necessarily lead to decisions on improved quality, reduction in expenditure or income generation
5. Improved quality of service	6. Governance and accountability may be blurred

Shared Service Centre (SSC)

A SSC would provide relevant functions through a separate entity comprising two or more partners. It is a business model commonly adopted by multinational corporations with diversified business units and extensive geographical coverage. However, over recent years public sector organisations have recognised that certain administration and service needs could be shared with other bodies. For example, NHS in Scotland is currently assessing whether its finance functions could be delivered on a shared basis.

The concept of shared services normally involves taking repetitive, transaction based “back-office” support processes or generic services out of departments/business units and moving them to a SSC. A key benefit of SSCs is that where internal inefficiencies already exist, improved efficiencies and economies of scale can be achieved while maintaining a high level of service. Whilst SSCs were originally conceived to save costs, organisations have increasingly recognised the additional role they can play in improving service quality. A SSC can be located on a single site, multi site location or virtual basis and configured as one of the following:

- a separate front and back office model:
- a virtual shared service centre basis;
- a regional back office model; or
- integrated front and back office.

Advantages	Disadvantages
<ul style="list-style-type: none"> • Processes organised to improve efficiency 	<ul style="list-style-type: none"> • Requirement for significant change management
<ul style="list-style-type: none"> • More time to spend on added value activities in respect of research and commercial activities 	<ul style="list-style-type: none"> • Initial capital investment required
<ul style="list-style-type: none"> • Cost reduction 	<ul style="list-style-type: none"> • Complexity of establishing contractual arrangements
<ul style="list-style-type: none"> • Improved quality of service 	<ul style="list-style-type: none"> • VAT implications of shared service centre may increase costs
<ul style="list-style-type: none"> • Independent mandate of operation 	<ul style="list-style-type: none"> • Dealing with legacy systems
<ul style="list-style-type: none"> • Physical aggregation not necessarily an issue 	

Appendix IV – Descriptions of Centres of Excellence

Centres of Excellence

Brief descriptions of the proposed Centres of Excellence are now given for both ACES (The Aberdeen Centre for Environmental Sustainability) and EBRC (The Edinburgh Bioscience Centre).

The Aberdeen Centre for Environmental Sustainability (ACES)

The Aberdeen Centre for Environmental Sustainability will combine the strengths of three high-profile research institutions in the Aberdeen area – Centre for Ecology & Hydrology, the Macaulay Institute and the University of Aberdeen. The three partners propose to bring together their expertise in land-use, ecology and socio-economics into interdisciplinary teams, aiming to resolve conflicting demands on the environment in a sustainable way.

The Aberdeen Centre for Environmental Sustainability (ACES) will be built on the three pillars of environmental sustainability, social progress and economic prosperity. ACES will carry out research to tackle the pressing problem of environmental conflict, which occurs when demands from the various consumers of natural environment resources meet head-on and risk damaging or exhausting those resources.

For the 21st century, we need to find new ways of thinking to tackle these problems. We need to integrate the skills of environmental, economic and social scientists and get them working together with policymakers and stakeholders. We need to develop sustainable solutions for the problems. ACES will fill this need by bringing together the right skills from within three significant partners, and co-locating them on one campus in a new cutting-edge research facility. ACES aims to act as a hub to attract the on-site participation of major environmental stakeholders

The Edinburgh Bioscience Centre (EBRC)

The EBRC will be a new institute based at Easter Bush, Midlothian, in close proximity to the Moredun Research Institute (MRI) based at Pentlands Science Park (PSP). The Institute will comprise a new build to house the Roslin Institute, some programmes of the Scottish Agricultural College, the Neuropathogenesis Unit (a BBSRC funded Institute) and the University of Edinburgh's Royal (Dick) School of Veterinary Studies. It will be linked with the existing scientific and animal accommodation at Moredun Research Institute.

It is envisaged that the Institute will house more than 500 scientists creating one of the largest bioscience centres in Europe. This will enhance critical mass in animal bioscience as it will bring together scientists with complementary skills in disease pathogenesis, genetics, epidemiology, genomics, proteomics and bioinformatics. Close collaboration will allow existing bodies to attract additional external research funding from UK sources and to compete worldwide for new opportunities in basic science and commercialisation of research.

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