

MODEL FOR QUALITY MANAGEMENT OF RESEARCH

4.1 RATIONALE

The management of research at the institutional level within higher education institutions has become a highly specialised and professional task. The vast majority of South African higher education institutions employ dedicated quality assurance officers and research (and innovation) directors/managers who preside over research management and administration offices. The CENIS benchmarking study (Mouton & Dowling, 2001) revealed the extent to which a diversity of functions is performed by these offices and the ever-increasing range of responsibilities they take on. Over and above the growing complexity of research management, South African higher education institutions face fundamental challenges to the way they define their role in society. These challenges stem from the following trends within South African higher education, which also directly or indirectly affect the management of research:

- The high-level goals for transforming the science system in the country from the point of view of both the profile of its human resources and the relationship between its outputs and the needs of a democratic society. (This imperative cuts across higher education and science and technology policy.)
- The national policy imperative (as contained in the National Plan on Higher Education) to increase research outputs (including the output of postgraduate students) while maintaining standards of excellence.
- The increasing shift within public sector research in the country towards more strategic and applied research, to the possible detriment of fundamental research.
- The growing demands for the commercialisation of research and the concomitant implications as far as intellectual property considerations are concerned.

Against this very dynamic and fluid context, the aim of this Guide is to help managers and directors of research to develop and implement systems and procedures to ensure, enhance, monitor and review the quality of research at the institutional level and to achieve institutional and national goals for knowledge production and research education.

4.2 GUIDING QUESTIONS

Bearing in mind that the management of research includes all those activities and processes geared towards creating an enabling environment for research to flourish and encouraging a culture that fosters imaginative, creative, innovative, high quality research, the following overarching and open-ended questions should serve as an ongoing guide to institutions for reflecting on the extent to which their systems achieve this:

- What are the unique and distinctive ways in which the institution enriches and adds excellence to the higher education sector and society, nationally, regionally and internationally?
- What does the institution do to produce a vibrant intellectual culture within the institution and in society at large?
- In what ways does the institution act as an incubator of new ideas and cutting edge knowledge and technologies within the national system of innovation?
- What are some of the notable examples in the previous three years of institutional success in promoting and enhancing quality?
- What does the institution do to attract and retain excellent researchers and scholars?
- Is the institutional infrastructure adequate to support and encourage an environment in which research can flourish?

(HEQC *Criteria for Institutional Audits*, 2004b:5)

4.3 MODEL FOR QUALITY MANAGEMENT OF RESEARCH

A 'matrix' model for quality management of research is presented in Figure 1. The columns (the four headings under 'Research Process') represent the phases in the research process, and the three rows represent the levels of research performance within institutions:

- *Columns:* Four 'phases' in the research process are identified:
 - o Developing and evaluating research proposals
 - o Accessing research resources
 - o Conducting and concluding the research
 - o Making the research public and adding value (the dissemination and utilisation phase).
- *Rows:* Three levels of research performance within institutions are identified:
 - o Individual research: postgraduate research
 - o Individual research: non-degree research
 - o Group/centre/unit research.

Figure 1: Model for quality management of research at institutional level

LEVELS OF RESEARCH PERFORMANCE	RESEARCH PROCESS			
	Developing and evaluating research proposals	Accessing research resources	Conducting and concluding the research	Making the research public
I. Individual research: Postgraduate research	1. Policies and regulations (Table 1.1) 2. Quality management structures (Table 2.1) 3. Research information systems (Table 3.1) 4. Support and development strategies (Table 4.1)			
II. Individual research: Non-degree research (research projects of staff)	1. Policies and regulations (Table 1.2) 2. Quality management structures (Table 2.2) 3. Research Information systems (Table 3.2) 4. Support and development strategies (Table 4.2)			
III. Group research: Research teams/ units/ centres/ institutes/ departments	1. Policies and regulations (Table 1.3) 2. Quality management structures (Table 2.3) 3. Research information systems (Table 3.3) 4. Support and development strategies (Table 4.3)			

The relationship between process and performance is shown in the three rows in the model. These rows list the following core mechanisms for quality management of research:

- o *Policies and regulations:* research policies and plans that contain the principles, rules, regulations and procedures that govern all aspects of research activities within the institution, and define relevant relations with stakeholders and partners
- o *Quality management structures:* research management structures (committees/panels/research offices/incubators/technology transfer offices) that serve as mechanisms for quality management of research
- o *Research information system:* a computerised information system (electronic database) that stores up to date and accurate information about the research and innovation activities, resources and outputs of the institution
- o *Support and development strategies:* specific activities or initiatives geared towards improving and enhancing the research capacity, resources and outputs of the institution.

The above mechanisms have been translated into the following series of tables that expand the information from the rows in the model:

- o Recommendations for research policies and regulations are elaborated in Tables 1.1, 1.2, and 1.3.
- o Recommendations for research quality management structures are elaborated in Tables 2.1, 2.2, and 2.3.

- o Recommendations for a research information system are elaborated in Tables 3.1, 3.2 and 3.3.
- o Recommendations for research support and development strategies are elaborated in Tables 4.1, 4.2 and 4.3.

Although the boundaries between levels of research performance in the model (Figure 1) or between phases of the research process (the tables) may not be as easily demarcated in practice as they appear here, this model and the accompanying tables can nevertheless be used by institutions as a heuristic tool for identifying and prioritising key quality concerns related to the management of research as they arise from users' own contexts.

4.3 INTERPRETING THE TABLES

An institution can build its research policy documents (Tables 1.1, 1.2, 1.3) around the level of research performance (e.g. 'Policy for Postgraduate Studies') or around the stage in the research and innovation cycle (e.g. 'Policy for Research Funding' or 'Policy for Research Support and Development') or around a particular aspect within one of these stages (e.g. 'Policy on Research Ethics'). Given the 'messy' way policies develop in real life, it would not be surprising to find that none of these principles works in isolation in real life. The categories are not watertight.

We need to point out, therefore, that the application of the model does not imply that each row needs to be filled by a unique entity. So, for example, an institution could have a research funding policy that cuts across all three levels of research performance in the top row of the table. Similarly, one could find that an institution has a separate policy document for doctoral studies/degrees that covers all four steps of the research process, from the development of doctoral proposals through to considerations of intellectual property rights and dissemination of findings when making the research public.

The tables are prefaced by a list of questions which institutions should use to reflect on their existing systems. These questions give a sense of the broad quality concerns related to policies, structures, information systems, and support and development for research.

The second column in each table lists recommendations that could be followed so as to establish good practice in quality management systems for research. Again it should be pointed out that not all the recommendations in a particular row will necessarily apply to every research project. For example, policies, structures and support mechanisms related to commercialisation of research might only apply to research projects that deal with new or applied technologies.

Finally, non-degree research activities at higher education institutions comprise both publicly funded and privately contracted research. The recommendations in this Guide could apply equally to both forms of research, although both are of course subject to their own quality review processes. It would therefore be expected that institutions would apply these recommendations in different ways depending on whether they focus more on their portfolio of basic research activities or more commercial/applied research.

1. RESEARCH POLICIES AND ASSOCIATED REGULATIONS AND RULES

Questions to ask in relation to research policies and associated regulations:

1. Is there a research policy that clearly outlines the research vision of the institution/faculty/department/unit/centre/group?
2. Are there policies and regulations that apply specifically to postgraduate research?
3. Do the policies and regulations cover all aspects of the research process, including submitting proposals, accessing resources, conducting research and disseminating or commercialising research?
4. Are the policies written with clear rationales, goals, objectives and explicit criteria?
5. Are there policies that relate to the support and development of research, including capacity development of new researchers, with due regard to race and gender considerations?
6. Do the policies encourage collaborative and problem-solving research at the local/regional/national level?
7. Are there any policies or regulations regarding access to funding and if so, are the criteria and mechanisms for accessing it made clear?
8. Are research policies geared towards increasing research participation, productivity and funding?
9. Do the research policies contain strategies and initiatives that address issues of equity, redress and representativeness?
10. Are policy goals and objectives feasible within given time frames?
11. Are research policy goals aligned with national goals?
12. Are research policy goals appropriate to the institution's mission and vision?
13. Are the research policies that exist regularly reviewed and adapted accordingly?
14. Are policies and regulations readily available and accessible to researchers at all levels of the institution?
15. Have sufficient funds been allocated to implement all the policies?

Table 1.1 Policies and regulations: Postgraduate research

RESEARCH PHASES	RECOMMENDATIONS <i>Policies/regulations relating to postgraduate research should specify:</i>
<i>Developing and evaluating proposals</i>	<ul style="list-style-type: none"> • The nature of research honours, master’s and doctoral studies and the proportion of research required for each degree • Rules for the submission and approval of research proposals • Contents and format of research proposals • The research ethics position of the institution
<i>Accessing resources</i>	<ul style="list-style-type: none"> • The sources of funding available to research honours, master’s and doctoral students • Procedures and criteria for accessing relevant funds • Availability of special funds, e.g. to attend conferences • Technical support (e.g. equipment) available to postgraduate students
<i>Conducting and concluding research</i>	<ul style="list-style-type: none"> • The appointment of supervisors and co-supervisors and their responsibilities • The appointment of external examiners and their responsibilities • Expectations and responsibilities of postgraduate students • Clear mechanisms for student complaints and appeals • How research progress will be monitored
<i>Making research public</i>	<ul style="list-style-type: none"> • The research ethics position of the institution • Copyright and intellectual property rules of the institution • Expectations of postgraduate students with respect to research publications

Table 1.2 Policies and regulations: Non-degree research

RESEARCH PHASES	RECOMMENDATIONS <i>Policies/regulations relating to non-degree research should specify:</i>
<i>Developing and evaluating proposals</i>	<ul style="list-style-type: none"> • The research plans/portfolio and research focus areas of the institution and/or the faculty/department • Whether differentiated support exists for different types of research (e.g. basic, strategic and applied) • Rules for the submission and approval of research proposals • The research ethics position of the institution
<i>Accessing resources</i>	<ul style="list-style-type: none"> • The sources of internal and external funding available for research These could differ for different categories of researchers. • Procedures and criteria for accessing relevant funds • Availability of special funds, e.g. to attend conferences or to invite visiting researchers • Strategies for increasing research funding
<i>Conducting and concluding research</i>	<ul style="list-style-type: none"> • How research progress will be monitored • Any incentives for new researchers, with due regard to race and gender. These could include additional funding support. • Any incentives for undertaking collaborative research or problem-solving research at the local/regional/national level • Mechanisms for finally reporting on the research
<i>Making research public</i>	<ul style="list-style-type: none"> • The research ethics position of the institution • Copyright and intellectual property rules of the institution • Rules, incentives and rewards regarding research-related publications, e.g. relative weightings of research outputs, distribution of DoE subsidies • Rules about commercialisation of research. These could include rules about patents, spin-off companies etc.

Table 1.3 Policies and regulations: Research teams/groups/centres/units/departments

RESEARCH PHASES	RECOMMENDATIONS <i>Policies/regulations related to research teams/groups/centres etc. should specify:</i>
<i>Developing and evaluating proposals</i>	<ul style="list-style-type: none"> • Criteria for constituting a research team/group/centre etc. • The research plans/portfolio and focus areas of the research team/group/centre etc. • Whether differentiated support exists for different types of research (e.g. basic, strategic and applied) • Rules for the submission and approval of research proposals • Mechanisms for monitoring the relevance of the research for the research team/group/centre etc.
<i>Accessing resources</i>	<ul style="list-style-type: none"> • The sources of internal and external funding available for the research teams etc. These could differ for different categories of research teams etc. • Procedures and criteria for accessing relevant funds and approaching specific sponsors • Availability of special funds, e.g. to attend conferences or to invite visiting researchers
<i>Conducting and concluding research</i>	<ul style="list-style-type: none"> • Any incentives for undertaking research as a team etc. These could include additional funding support • Any incentives for the participation of new researchers (with due regard to race and gender) within the teams etc. • How research progress will be monitored within the team and by the institution • Mechanisms for finally reporting on the research
<i>Making research public</i>	<ul style="list-style-type: none"> • The research ethics position of the institution and/or the research teams etc. • Copyright and intellectual property rules of the institution • Rules, incentives and rewards regarding research-related publications • Rules about commercialisation of research. These could include rules about patents, spin-off companies etc. • Mechanisms for profiling the research activities of the research team/group/centre etc.

2. QUALITY MANAGEMENT STRUCTURES FOR RESEARCH

Questions to ask in relation to quality management structures for research:

1. Are there sufficient and appropriate structures that implement, coordinate and monitor research policies related to all aspects of the research process, including the evaluation and approval of research, assessment and approval of research funding applications, adherence to research ethics codes and the commercialisation of research?
2. Do the structures contribute to creating an enabling environment for research to flourish in the institution?
3. Are there sufficient and appropriate structures that implement and monitor all aspects of postgraduate research, including mechanisms for students to defend their research?
4. Are there structures that approve and monitor the establishment of research teams/groups/centres/units?
5. Are the structures set up at appropriate levels within the institution?
6. Do participants in these structures have sufficient authority, credibility and expertise to carry out these functions?
7. Does the composition of structures conform to principles of equity and redress?
8. Do the structures function with reference to a clear 'code of conduct' that outlines their brief, e.g. procedures for committees?
9. Do the structures implement clear and transparent criteria consistently?
10. Does coordination and monitoring by structures contribute to the achievement of policy objectives and targets?
11. Do structures operate efficiently?

Table 2.1 Quality management structures: Postgraduate research

RESEARCH PHASES	RECOMMENDATIONS <i>Quality management structures related to postgraduate research should include:</i>
<i>Developing and evaluating proposals</i>	<ul style="list-style-type: none"> • Structures for evaluation of research proposals. Participants on these structures could include deans, members of the faculty, prospective supervisors and, if need be, additional experts in the research field. • Structures for approval of research proposals. These could include a centralised or decentralised research or higher degree committees through which all research proposals pass. • The application of explicit criteria for evaluation and approval of research. Criteria could include: <ul style="list-style-type: none"> o Conceptualisation and objectives of the research o Feasibility of the research o Suitability of the methodology and analysis o Scientific integrity of the research
<i>Accessing resources</i>	<ul style="list-style-type: none"> • Structures for approval of research funding. Structures could include centralised or decentralised research committees through which all research funding applications pass. • Structures for approval of special funds, e.g. to attend conferences • The application of explicit criteria for approval of funding. Criteria could include: <ul style="list-style-type: none"> o Contribution the research could make to the relevant field o Suitability of budget for the research o Availability of time and ability of applicant to succeed
<i>Conducting and concluding research</i>	<ul style="list-style-type: none"> • Structures to monitor research progress. These could include the supervisor–student relationship or supervisory panels/committees. • Structures for doctoral students to defend their research. These could include supervisors and faculty members as well as experts in the relevant research field. • Structures for research students to complain and appeal about any aspect of their research supervision if they believe they have been wronged. • Structures for approval of completed research. These could include external examiners.
<i>Making research public</i>	<ul style="list-style-type: none"> • Structures to assess compliance with research ethics and intellectual property rules of the institution.

Table 2.2 Quality management structures: Non-degree research

RESEARCH PHASES	RECOMMENDATIONS <i>Quality management structures related to non-degree research should include:</i>
<i>Developing and evaluating proposals</i>	<ul style="list-style-type: none"> • Structures for the evaluation of research proposals for internal and external funding. These could include centralised or decentralised research committees. • The application of explicit criteria for evaluation and approval of research. Criteria could include: <ul style="list-style-type: none"> o Conceptualisation and objectives of the research o Feasibility of the research o Suitability of the methodology and analysis o Scientific integrity of the research
<i>Accessing resources</i>	<ul style="list-style-type: none"> • Structures for approval of internal research funding. Structures could include centralised or decentralised research committees through which all funding applications pass. • Structures for approval of special funds, e.g. to attend conferences or to invite visiting researchers • The application of explicit criteria for approval of funding. Criteria could include: <ul style="list-style-type: none"> o Strategic focus of the research o Contribution the research could make to the relevant field or to the faculty's broader research plan o Suitability of budget for the research o Participation of researchers from a targeted category for special support o Inclusion of collaborators or partnerships o Publication record of researcher
<i>Conducting and concluding research</i>	<ul style="list-style-type: none"> o Structures to monitor research progress. These could include centralised or decentralised research committees. o Structures for submission of completed research. These could include centralised or decentralised research committees.
<i>Making research public</i>	<ul style="list-style-type: none"> • Structures to assess compliance with research ethics and intellectual property rules of the institution. • Structures to assess viability of commercialising research. These could include technology transfer offices. • Structures to monitor research output • The application of explicit criteria for measuring research output

Table 2.3 Quality management structures: Research teams/groups/centres/units/departments

RESEARCH PHASES	RECOMMENDATIONS <i>Quality management structures related to research teams/groups/centres etc. should include:</i>
<i>Developing and evaluating proposals</i>	<ul style="list-style-type: none"> • Structures to monitor and approve the establishment of research teams etc. • Structures for the evaluation of research proposals for internal and external funding. These could include centralised or decentralised research committees as well as committees set up by the external funders. • The application of explicit criteria for evaluation and approval of research. Criteria could include: <ul style="list-style-type: none"> o Fit between objectives of the research and the focus of the research team etc. o Feasibility of the research o Suitability of the methodology and analysis o Scientific integrity of the research
<i>Accessing resources</i>	<ul style="list-style-type: none"> • Structures for approval of internal research funding. Structures could include centralised or decentralised research committees through which all funding applications pass. • Structures for approval of special funds, e.g. to attend conferences or invite visiting researchers • The application of explicit criteria for approval of funding. Criteria could include: <ul style="list-style-type: none"> o Strategic focus of the research o Contribution the research could make to the relevant field or to broader research plan of the research team/group/centre etc. o Suitability of budget for the research o Participation of researchers from a targeted category for special support o Publication record of participating researchers
<i>Conducting and concluding research</i>	<ul style="list-style-type: none"> o Structures to monitor and evaluate effectiveness and efficiency of research teams etc. Such evaluation could be cyclic (every 3 or 5 years) and structures could include external experts in the relevant field. o Structures to monitor research progress. These could be internal or external to the research team/group/centre etc. o Structures for submission of completed research. These could be internal or external to the research team/group/centre etc.

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- Structures to assess compliance with research ethics and intellectual property rules of the institution
- Structures to assess viability of commercialising research
- Structures to monitor research output. These could be internal or external to the research team/group/ centre etc.
- The application of explicit criteria for measuring research output

3. RESEARCH INFORMATION SYSTEMS

Questions to ask in relation to research information systems:

1. Is all data relating to research in the institution captured by a central research information system, including data relating to research capacity, research funding, research outputs?
2. Is all data relating to postgraduate research in the institution captured by a central research information system?
3. Are data types clearly defined and comparable to other data collected within the national research system?
4. Is the system comprehensive in its coverage of research information to support institutional planning as well as external reporting on research performance?
5. Does the system allow for reporting on individual researchers within a range of categories, including race, gender, age and fields of study?
6. Does the system allow for reporting on research activity at different levels within the institution, including faculties, departments and research centres/groups/units?
7. Is the system robust and reliable?
8. Is accurate information readily accessible timeously and at minimal cost?
9. Is the system regularly updated?

Table 3.1 Research information systems: Postgraduate research

RESEARCH PHASES	RECOMMENDATIONS <i>A research information system should capture the following data relating to postgraduate research:</i>
<i>Developing and evaluating proposals</i>	<ul style="list-style-type: none"> • List of all approved research honours, master’s and doctoral studies with start dates, linked to department, supervisor and demographic information of student
<i>Accessing resources</i>	<ul style="list-style-type: none"> • Total amount of funding available for postgraduate research • Success rates of funding applications by honours, master’s and doctoral students • List of all sources of funding for honours, master’s and doctoral research linked to actual allocation of funds per research project, with starting dates of funding • Total amount of funds allocated to honours, master’s and doctoral research, disaggregated to internal and external funds • Total amount of special funds allocated to research students, e.g. to attend conferences
<i>Conducting and concluding research</i>	<ul style="list-style-type: none"> • List of all completed master’s and doctoral research, with end dates, linked to student information, department and supervisor
<i>Making research public</i>	<ul style="list-style-type: none"> • List of all publications by research students, including co-authorships, linked to list of DoE accredited journals • List of all conference presentations by research students, categorised into national and international

Table 3.2 Research information systems: Non-degree research

RESEARCH PHASES	RECOMMENDATIONS <i>A research information system should capture the following data relating to non-degree research:</i>
<i>Developing and evaluating proposals</i>	<ul style="list-style-type: none"> • List of approved research proposals with starting dates, linked to department, and demographic information of staff member • List of approved postdoctoral posts with starting dates, linked to department and demographic information of postdoctoral student
<i>Accessing resources</i>	<ul style="list-style-type: none"> • Total amount of funding available for non-degree and postdoctoral research • Success rates of researchers' funding applications • List of all sources of funding for non-degree research linked to actual allocation of funds per research project, with starting dates of funding • Total amount of funds allocated to non-degree research, disaggregated to internal and external funds • Total amount of special funds allocated to staff, e.g. to attend research conferences or to host invited researchers • Total amount of funds allocated to postdoctoral research
<i>Conducting and concluding research</i>	<ul style="list-style-type: none"> • List of all completed research, with end dates, linked to staff information and department and linked to research type (e.g. basic, strategic and applied) • List of medals, prizes and awards conferred on staff by research bodies and associations, linked to their departments. This could include NRF ratings of scientists.
<i>Making research public</i>	<ul style="list-style-type: none"> • List of all publications by staff linked to list of DoE accredited journals • List of all publications co-authored with research students, linked to department • List of all non-SAPSE accredited publications by staff. These could include: <ul style="list-style-type: none"> o Contract research reports o Technical manuals o Inputs to official policy documents • List of all conference presentations by staff, categorised into national and international. • List of all patents and spin-off companies related to staff and departments

Table 3.3 Research information systems: Research teams/groups/centres/units/departments

RESEARCH PHASES	RECOMMENDATIONS <i>A research information system should capture the following data relating to research teams/groups/centres etc:</i>
<i>Developing and evaluating proposals</i>	<ul style="list-style-type: none"> • List of all research teams/groups/centres etc. linked to faculty or department • List of all researchers in the research team/group/ centre etc. linked to demographic information (including qualification and rank) and research focus areas and/or disciplinary field • List of postgraduate students involved in research team/group/ centre etc. linked to demographic information of students • List of approved research proposals with start dates, linked to research team etc., and demographic information of staff members • List of medals, prizes and awards conferred on research teams etc. by research bodies and associations, linked to their departments or faculties.
<i>Accessing resources</i>	<ul style="list-style-type: none"> • List of all sources of funding for research teams etc., linked to actual allocation of funds per research project, with starting dates of funding • Total amount of funds allocated to research by research teams etc., disaggregated to internal and external funds • Total amount of special funds allocated to research teams etc., e.g. to attend research conferences or host visiting researchers • A record of ongoing links/relationships with strategic partners/ sponsors
<i>Conducting and concluding research</i>	<ul style="list-style-type: none"> • List of all completed research, with end dates, linked to staff information and research teams etc. and linked to research type (e.g. basic, strategic and applied)
<i>Making research public</i>	<ul style="list-style-type: none"> • List of all publications by the research teams etc., linked to staff and linked to list of DoE accredited journals • List of all conference presentations by members of research teams etc., categorised into national and international. • List of all publications co-authored with research students, linked to research teams etc. • List of all non-SAPSE accredited publications by research teams etc. (e.g. contract research reports and technical manuals) • Inputs to official policy documents/ List of all patents and spin-off companies related to research teams etc.

4. SUPPORT AND DEVELOPMENT STRATEGIES

Questions to ask in relation to support and development strategies:

1. Are support and development strategies directed at all levels of the research process, including writing research proposals, accessing resources, completing research and making the research public?
2. Do support and development strategies contribute towards creating an enabling environment for research to flourish in the institution?
3. Are support and development strategies targeted at specific groups of researchers, including new researchers and researchers from designated groups?
4. Are there support and development strategies that specifically target postgraduate research?
5. Are there support and development strategies to encourage collaborative and problem-solving research?
6. Are there support and development strategies that specifically target senior researchers and research managers?
7. Is there a range of support strategies, including incentives, training, mentoring or exchange programmes?
8. Are strategies geared towards meeting specific targets, e.g. for research participation and productivity?
9. Is there adequate infrastructural support to foster and encourage a vigorous research environment?

Table 4.1 Support and development: Postgraduate research

RESEARCH PHASES	RECOMMENDATIONS <i>Support and development strategies relating to postgraduate research should include:</i>
<i>Developing and evaluating proposals</i>	<ul style="list-style-type: none"> • Training and development opportunities for supervisors • Regular discussion meetings between students and supervisors • Availability of research design and methods courses to students • An orientation and induction programme for all research students
<i>Accessing resources</i>	<ul style="list-style-type: none"> • Scholarships/grants/bursaries for full-time and part-time study • Special funds to support field work and library searches • Fee reductions or bursaries for staff engaged in research studies • Special funds available for conference presentations • Special funds available to support publishing in accredited journals
<i>Conducting and concluding research</i>	<ul style="list-style-type: none"> • Training and development opportunities for supervisors • Regular discussion meetings between students and supervisors • Regular discussion forums with other researchers (doctoral students or staff) working in related research fields • Access to special support services in the institution, e.g. IT support or editing facilities • Access to visiting researchers, experts in their fields • Rewards/credits to supervisors upon their research students' graduation
<i>Making research public</i>	<ul style="list-style-type: none"> • Faculty or departmental seminars at which research is presented • Collaborative publications with supervisor

Table 4.2 Support and development: Non-degree research

RESEARCH PHASES	RECOMMENDATIONS <i>Support and development strategies relating to non-degree research should include:</i>
<i>Developing and evaluating proposals</i>	<ul style="list-style-type: none"> • Incentives for senior researchers to act as mentors to new researchers, women and previously disadvantaged groups • Training and development opportunities for mentors • Establishment of collegial groups to support development of proposals
<i>Accessing resources</i>	<ul style="list-style-type: none"> • Special funds earmarked for various categories of researchers. These could include: <ul style="list-style-type: none"> o Established researchers o Young researchers o Staff engaged in postgraduate studies o Women and previously disadvantaged groups • Research scholarships abroad for new researchers based on academic and research excellence • Special funds available for employing research assistants • Special funds available for conference presentations, locally and internationally • Special funds available to support publishing in accredited journals
<i>Conducting and concluding research</i>	<ul style="list-style-type: none"> • Regular departmental seminars in which research projects/interests/ideas are discussed • Staff development/mentorship programmes for new researchers and researchers in specially targeted groups. The latter could include women and previously disadvantaged researchers. • Training and development opportunities for mentors
<i>Making research public</i>	<ul style="list-style-type: none"> • Faculty or departmental seminars at which research is presented • Rewards, based on clear criteria, for outstanding scholarly work over a period of time • Rewards and incentives for increasing quality research outputs • A system of weighting research outputs in order to encourage the production of subsidy-related publications • Incentives to commercialise research, where appropriate

Table 4.3 Support and development: Research teams/groups/centres/units/departments

RESEARCH PHASES	RECOMMENDATIONS <i>Support and development strategies relating to research teams/groups/centres etc. should include:</i>
<i>Developing and evaluating proposals</i>	<ul style="list-style-type: none"> • Establishment of collegial groups to support development of proposals • Research portfolio management support of the research team etc. • Incentives to include postgraduate students as well as researchers from designated groups as part of the teams etc.
<i>Accessing resources</i>	<ul style="list-style-type: none"> • Special funds earmarked for research teams etc. • Special funds available to bring visiting academics and researchers to campus to work with the teams etc. • Special funds available for conference presentations, locally and internationally • Facilitating access to funds from targeted donors/sponsors
<i>Conducting and concluding research</i>	<ul style="list-style-type: none"> • Financial management support for sustaining the research teams etc. • Rewards for including researchers from specially targeted groups in research teams etc. • Human Resources support for employing contract or temporary research staff as part of research teams etc.
<i>Making research public</i>	<ul style="list-style-type: none"> • Faculty or departmental seminars at which research is presented • Rewards and incentives for increasing quality research outputs • Incentives to commercialise research, where appropriate • Activities/resources to profile activities and outputs of research teams etc.