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DISCUSSION PAPER

Australian and New Zealand Standard
Research Classification Review 2019

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Section 1: Introduction

The Australian and New Zealand Standard Research Classification (ANZSRC) is a set of three related classifications developed for use in the measurement and analysis of research and experimental development (R&D) undertaken in Australia and New Zealand. ANZSRC is used both in the public and private sectors. It allows the comparison of R&D data between sectors of the economy (e.g. general government, private non-profit organisations, business enterprises and educational institutions).

ANZSRC was published in 2008, as a replacement for the Australian Standard Research Classification (ASRC). ANZSRC was introduced to keep pace with contemporary research and to create a joint Australian and New Zealand classification for research and experimental development. It has three main types of classification: Type of Activity (ToA), Fields of Research (FoR), and Socio-Economic Objective (SEO).¹

The use of these classifications ensures that R&D statistics are useful to governments, educational institutions, international organisations, scientific, professional or business organisations, business enterprises, community groups and private individuals.

In New Zealand ANZSRC is used by government, funding agencies, Crown Research Institutes, universities, and independent research organisations, with the three related classifications (ToA, FoR and SEO) utilised to varying degrees. The FoR is the most commonly employed classification. Stats NZ uses FoRs for the national Research and Development Survey, and international reporting compliance. The FoR is used by the Ministry of Business, Innovation and Employment (MBIE), the Health Research Council, and the Royal Society of New Zealand to support funding decisions.

Similarly, in Australia ANZSRC is used by a wide variety of government, university and other stakeholders. For example, the Australian Bureau of Statistics (ABS) uses ANZSRC in its R&D data collections and the Department of Education and Training uses ANZSRC in the Higher Education Research Data Collection. The ARC uses the FoR for its research funding processes, and the Excellence in Research for Australia (ERA), and Engagement and Impact (EI) research evaluation exercises, and the SEO for reporting purposes.

In light of these dual Government uses of ANZSRC—as a statistical classification and a basis for evaluation—it is important that ANZSRC is structured in a way so as to support best practice in data reporting and management.

ANZSRC is also used nationally and internationally for a wide variety of applications by a range of government, education and industry stakeholders.

¹ Australian Bureau of Statistics (ABS), *Australian New Zealand Standard Research Classification (ANZSRC)* (2008)
<<http://www.abs.gov.au/ausstats/abs@.nsf/Latestproducts/1297.0Main%20Features32008?opendocument&abname=Summary&prodno=1297.0&issue=2008&num=&view=>>

ANZSRC Review

Announced in June 2018, the ANZSRC Review ('the Review') will be carried out jointly by the Australian Bureau of Statistics (ABS), Stats NZ, the Australian Research Council (ARC) and the New Zealand Ministry of Business, Innovation and Employment (MBIE).

One of the aims of the Review is to ensure that ANZSRC reflects current practice and is sufficiently robust to allow for long-term data analysis.

The Review will be guided by the ANZSRC Review Steering Committee, comprising representatives from the ABS, Stats NZ, ARC and MBIE. The role of the Steering Committee is to oversee the review, encourage implementation of the revised ANZSRC, and manage project governance. Any updates to ANZSRC will require endorsement by the ABS and Stats NZ.

To support the Review, the ARC and ABS will conduct a series of consultations with Australian stakeholders. A parallel process will be undertaken in New Zealand by MBIE and Stats NZ, with the results of both consultations informing the development of the revised ANZSRC.

The purpose of this paper is to prompt and frame discussion during the first consultation period of the Review, which will run from 25 February to 7 June 2019. During the first consultation period, the Review will gather stakeholder feedback on the current classification including potential areas for the Review and how organisations and individuals use ANZSRC. In the New Zealand context, this initial consultation will also consider feedback provided by stakeholders in an initial scoping review conducted in 2016, undertaken in anticipation of the current full ANZSRC review.

Following this consultation period, the ANZSRC Review Steering Committee will consider feedback and a draft revised ANZSRC will be developed. It is anticipated that this draft will be made available for public comment in the final quarter of 2019, before the updated ANZSRC is published in 2020.

Type of Activity

Four types of activity applicable to R&D are recognised in this component of the ANZSRC classification:

- Pure basic research
- Strategic basic research
- Applied research
- Experimental development

Pure basic research is experimental and theoretical work undertaken to acquire new knowledge without looking for long term benefits other than the advancement of knowledge.

Strategic basic research is experimental and theoretical work undertaken to acquire new knowledge directed into specified broad areas in the expectation of practical discoveries. It provides the broad base of knowledge necessary for the solution of recognised practical problems.

Applied research is original work undertaken primarily to acquire new knowledge with a specific application in view. It is undertaken either to determine possible uses for the findings of basic research or to determine new ways of achieving some specific and predetermined objectives.

Experimental development is systematic work, using existing knowledge gained from research or practical experience, which is directed to producing new materials, products, devices, policies, behaviours or outlooks; to installing new processes, systems and services; or to improving substantially those already produced or installed.

There were no changes to the ToA categories between the 1998 ASRC and 2008 ANZSRC. The 2008 ANZSRC categories align closely with those in OECD's *Frascati Manual 2015*.² Stakeholder views are sought on whether the revised ANZSRC should directly adopt the *Frascati Manual 2015* ToA definitions.

Fields of Research

ANZSRC FoR is a classification for research activity according to the *methodology* used in the research, rather than the activity of the unit performing the research or the purpose of the research.

The FoR classification has three hierarchical levels of increasing specificity. The three levels are Divisions, Groups and Fields, respectively indicated by two, four or six digit classification numbers. The current FoR classification has 22 Divisions, 157 Groups and 1238 Fields.

Each Division is based on a broad discipline. Groups within each Division are those which share the same broad methodology, techniques and/or perspective as others in the Division. Each Group is a collection of related Fields. An example of this hierarchy is:

Division 21 History and Archaeology
Group 2101 Archaeology
Field 210103 Archaeology of Asia, Africa and the Americas

ANZSRC was developed based on the 1998 *Australian Standard Research Classification (ASRC)*³, which used a similar hierarchical structure. In developing ANZSRC, ASRC categories that had reported very little activity in ABS surveys were merged with other categories or deleted, in consultation with experts in the relevant fields. Some Division and Group classifications that reported very high levels of activity were split into more targeted codes, and some new codes were added for emerging research areas identified by experts.

As far as possible, the 2008 ANZSRC FoR classification was designed to align at the Division level with the OECD's *Fields of Science 2007*⁴ classification. However, some changes were made to better align with the Australian and New Zealand research environment. A table of correspondences between ANZSRC and the Fields of Science is [available on the ABS Website](#).

² OECD, *Frascati Manual* (2015) <<http://www.oecd.org/sti/inno/frascati-manual.htm>>.

³ ABS, *Australian Standard Research Classification* (1998) <<http://www.abs.gov.au/ausstats/abs@.nsf/0/2D3B6B2B68A6834FCA25697E0018FB2D>>.

⁴ OECD, *Revised Fields of Science and Technology (FOS) Classification in the Frascati Manual* (2007) <<http://www.oecd.org/science/inno/38235147.pdf>>.

Socio-Economic Objective

The ANZSRC SEO classification allows R&D activity in Australia and New Zealand to be categorised according to the intended purpose or outcome of the research, rather than the processes or techniques used in order to achieve this objective. The purpose categories include processes, products, health, education and other social and environmental aspects in Australia and New Zealand that R&D activity aims to improve.

The SEO is a hierarchical classification with four levels, namely Sectors (letter), Divisions (2 digits), Groups (4 digits) and Objectives (6 digits). The current SEO has 5 Sectors, 17 Divisions, 119 Groups and 847 Objectives. While the Sector forms part of the hierarchical structure of the SEO, it is used only for grouping divisions for publication of R&D data, not for data collection.

Each Division is based on a broad research objective. Groups within each Division are those which are aligned towards the same objective as the Division. Each Group is a collection of related research Objectives.

The hierarchical structure of the SEO is illustrated in the example below:

Sector.....B Economic Development
Division.....86 Manufacturing
Group.....8607 Agricultural Chemicals
Objective.....860702 Chemical Fertilisers

Scope of the Review

The scope of the Review includes all content of ANZSRC, including both the overall structure as well as specific categories contained within the ToA, FoR and SEO classifications. The final updated ANZSRC may add, remove, merge, split or move categories at any or all levels of the classification, or consider a new structure for the classification. Possible changes to ANZSRC will consider the costs and administrative burden required for stakeholders to implement any such changes and the impact on time-series comparability of data sets.

The desired outcome from this consultation is the development of an updated, accurate statistical classification system with sufficient robustness to allow for long-term usage and implementation.

The Review will also consider how users of the classification will implement the changes. The ABS and Stats NZ will provide guidance on mapping between the current and revised classifications. Other support (such as coding tools) may be provided where a need is identified during the consultation process.

ANZSRC was developed to meet the dual needs for a comprehensive description of Australia's and New Zealand's research environment, as well as the ability to compare research statistics internationally. The Review will take into account international users of ANZSRC and alignment with international standards such as the OECD *Frascati Manual 2015* and the 2013 United Nations *Best*

Practice Guidelines for Developing International Statistical Classification 2013.⁵ However, the revised classification will retain its focus on the particular structures and needs of the Australian and New Zealand research communities.

The Review is limited to revising the statistical classifications in ANZSRC. Particular uses of ANZSRC are out of scope of this Review.

Section 2: Principles for the Review

The following principles, based on the United Nations *Best Practice Guidelines for Developing International Statistical Classification 2013*, will help guide the ABS, Stats NZ, ARC and MBIE as part of the Review of ANZSRC:

- Classification Structures—The FoR and SEO classifications are hierarchical, allowing analysis of data at multiple levels of aggregation. The ToA component is a flat classification.
- Mutual Exclusivity—The classifications should be unambiguous, each unit of research should fit into one category of each classification, and categories should not overlap each other.
- Exhaustiveness—All research should fit somewhere in each of the classifications; there should be no gaps in the classifications.
- Statistical Feasibility—It must be possible for users to effectively, accurately and consistently distinguish between categories of each classification on the basis of the research being classified.
- Time-Series Comparability—Data classified under the revised ANZSRC should be comparable over time to data classified under previous versions of ANZSRC and, where possible, ASRC.
- Fit for purpose—ANZSRC must be suitable as a classification for reporting and evaluation purposes, and must not drive perverse behaviours in data reporting or management.

Stakeholders are encouraged to consider these principles when developing their feedback on ANZSRC.

Fields of Research Hierarchy

The Review will also consider appropriate definitions and criteria to distinguish which research areas should be located at the Division, Group and Field levels respectively. The intention is to establish a clear set of working definitions and criteria which are overall accepted by the stakeholders for each level of the Fields of Research hierarchy. To undertake this work the Review will be informed by the *Frascati Manual 2015*, which states ‘Where the content of the R&D subject matter is closely related, subjects are grouped together to form the broad (one-digit) and narrower (two-digit) fields of the classification.’⁶

⁵ United Nations Expert Group on International Statistical Classifications, *Best Practice Guidelines for Developing International Statistical Classification* (2013)
<https://unstats.un.org/unsd/classifications/bestpractices>.

⁶ OECD, *Frascati Manual* (2015) p 58.

Section 3: Specific issues for consideration

The Review will consider all aspects of ANZSRC, including all FoR, ToA and SEO classifications. However, comment is particularly sought in relation to the following issues:

Aboriginal and Torres Strait Islander, Māori and Pacific Peoples Studies

ANZSRC FoRs do capture Aboriginal and Torres Strait Islander Studies, Māori Studies, and Pacific Peoples Studies but this is predominately at the Field level across different discipline areas. With the exception of 1802 Māori Law, the broad spectrum of indigenous research is not represented at the Group or Division level in ANZSRC. The ANZSRC structure recognises that this research is performed in a variety of research disciplines, for example health, education and the arts.

However, Australian and New Zealand government reporting and evaluation of research is often not made at the Field level. As a result Aboriginal and Torres Strait Islander Studies, Māori Studies, and Pacific Peoples Studies research may not be visible or recognised.

The Review will include consideration of whether these alternative groupings are sufficient and appropriate for users to classify and analyse Aboriginal and Torres Strait Islander, Māori and Pacific Peoples Studies research. Consideration will be given to creating new Group- and Division-level FoR codes that capture these research disciplines.

Interdisciplinary and Multidisciplinary Research

Interdisciplinary research is research that integrates tools and concepts from multiple, often disparate, fields of research into one research activity. Multidisciplinary research involves researchers from different disciplinary backgrounds working together to solve research problems. The principle of mutual exclusivity should support classification of interdisciplinary and multidisciplinary research, with clear classifications applicable to each component of the research.

Feedback received by the Review agencies indicates that much current research is interdisciplinary or multidisciplinary in nature, and that this research can be difficult to classify within ANZSRC. In the major reporting and evaluation mechanisms using ANZSRC, interdisciplinary research must be either allocated to the most appropriate FoR or assigned across fields. This can mean that information about the interdisciplinarity of research may be lost.

Stakeholder feedback is sought on how ANZSRC could be revised to better classify interdisciplinary and multidisciplinary research. The Review will consider whether and how these can be captured without compromising the structure or mutual exclusivity of the classification.

New and emerging research disciplines

The Review will consider adding new categories to classify new research disciplines or activities that have arisen since the publication of ANZSRC in 2008. In addition, to ensure ANZSRC remains relevant into the future, the Review will also consider classifications for emerging subject areas that are likely to generate significant volumes of research activity over the next ten years, even if the current level of activity in those areas is low. The Review will seek stakeholder feedback on how frequently ANZSRC should be updated in future to incorporate new research areas.

Section 4: Review process and timeline

The joint partners in the Review are committed to undertaking a transparent process with multiple opportunities for public participation.

The Australian and New Zealand Governments will separately undertake consultation in each nation, given the technical nature of ANZSRC and the fit for purpose implementation approaches taken to suit New Zealand's and Australia's own circumstances. Technical advice and guidance will be provided by expert reference groups comprised of statistical and research classification experts.

This first public consultation period will be held in Australia and New Zealand from 25 February to 7 June 2019 to collect stakeholder views. **Submissions must be received by Friday 7 June 2019** to be considered as a part of the draft ANZSRC. The Review agencies cannot guarantee that any feedback outside this consultation period will be captured by the review, so stakeholders who have previously made comments on ANZSRC are encouraged to re-submit them through this review process.

Submissions in response to this discussion paper are invited via the [online submission portal](#).

The submission form will allow you to:

- upload a response in Microsoft Word or machine-readable PDF format
- respond to the questions in this Discussion Paper, or
- make a shorter submission (for example addressing issues with specific codes).

Submissions should be Microsoft Word or machine-readable PDF files. Submissions may be made public unless accompanied by a request that they not be made public. Submission information may be shared with Australian or New Zealand government agencies and other organisations for the purpose of the review.

Submissions may be made anonymously or pseudonymously, however in these cases the Review agencies will be unable to follow up on any details in the submission.

In addition to public consultation, targeted consultations will be organised to actively seek advice and input from stakeholders including:

- universities and their research offices
- discipline peak bodies
- users of ANZSRC-coded data such as researchers and government agencies
- businesses that engage in data services or that use relevant classification systems.

These consultations may include roundtable discussions and meetings with individuals.

The public and targeted consultations will lead to the development of a draft revised ANZSRC which will be made available for public comment in late 2019 prior to adoption in 2020.

Questions about the review should be directed to:

- Australian stakeholders: ARC-ANZSRCReview@arc.gov.au
- New Zealand stakeholders: ANZSRCReview@mbie.govt.nz

Questions to Guide Discussion and Feedback

ANZSRC Principles

1. Are the principles of the Review outlined in Section 2 of the Discussion Paper appropriate and sufficient? Do any further overarching principles need to be considered in developing the revised ANZSRC?

ANZSRC Classifications

Type of Activity

2. What suggestions do you have to improve the ToA component of the classification?
3. Are there any other categories that should be added to the ToA? If so, how would they be defined?
4. Is there ambiguity in the existing ToA categories? How could this be improved?
5. Should ANZSRC adopt the *Frascati Manual 2015* ToA definitions?

Fields of Research

6. Is the current overall structure appropriate?
 - a. Should there be more or fewer levels to the hierarchy?
 - b. Would it be useful to have broad themes or 'one digit' classifications such as Sciences, Medicine, Social Sciences and Humanities, similar to the 'Sector' level of SEO?
7. What criteria, in your view, should be applied to determine the classification of research?
 - a. What criteria should be applied to determine the boundaries between Division, Group and Field classifications?
 - b. Should research methodologies, publication practices, or any other factors be considered as key criteria for classifying research?
 - c. Apart from the Principles described in Section 2, are there any other specific criteria that should be applied?
8. Where should the classifications change (at the Division, Group or Field level)? Please identify specific codes, where appropriate. In particular:
 - a. What new or emerging areas of research should be allocated FoR codes (and at which level)?
 - b. Should any of the existing FoR codes be split, deleted or merged?
 - c. Should any of the existing Group or Field codes be moved to other places in the classification?
 - d. Is there ambiguity or redundancy in the existing FoR codes? (e.g. areas where research could reasonably be classified in two or more different codes)
 - e. Where changes are proposed, please explain why the changes are necessary and what criteria you have used to determine the need for change.
9. How can the FoR codes better capture Aboriginal and Torres Strait Islander Studies, Māori Studies, and Pacific Peoples Studies research, and at what level (e.g. Field, Group, Division)?

10. How can the FoR codes better capture interdisciplinary/multidisciplinary research, and at what level (e.g. Field, Group, Division)?

Socio-economic Objective

11. Is the current overall structure appropriate?
 - a. Should there be more or fewer levels to the hierarchy?
 - b. Would it be desirable to change the Sector codes to numerical, rather than alphabetic, identifiers?
12. Are the Sector level categories well defined enough to capture all types of socio-economic objectives?
 - a. Do you have specific feedback on the usability and interpretability of the current Sector categories?
13. Do the Division level categories appropriately capture all types of research objectives?
 - a. Do you have specific feedback on the usability and interpretability of the current Division categories?
 - b. Are there emerging areas of economic development that should be better defined?
14. Should any of the existing SEO codes be split, deleted or merged?
 - a. Where changes are proposed, please explain why the changes are necessary and what criteria you have used to determine the need for change.
15. Is it easy or difficult to categorise large or complex research projects or programs under SEO? How could categorisation be simplified?

Implementation

16. How do you (or your organisation) currently use ANZSRC?
17. How would you (or your organisation) be affected if ANZSRC changes?
18. What support do you need to implement ANZSRC (e.g. concordances for time-series mapping, coding tools etc.)?
19. How frequently should the ANZSRC be updated in the future? What advantages or disadvantages would there be if, in future, ANZSRC was updated dynamically and on an ongoing basis in response to stakeholder feedback?