

Flows of mathematics students

The numbers of mathematical science graduates at all levels are generally increasing, except for a few countries, according to the ICMI Pipeline project co-ordinated by ICMI president Bill Barton. This contradicts an international perception that the number of mathematics graduates is falling.

But the *percentage* of mathematical science graduates is declining slightly. This may be because more courses with mathematical content are attracting school leavers who would otherwise enrol in undergraduate mathematics.

Many senior secondary mathematics teachers in New Zealand, Australia, and the UK are also approaching retirement, and shortages of mathematics teachers are likely as fewer students enter teacher training.

The project was initiated at the request of ICMI's parent body, the International Mathematical Union, and has collected data from ten countries: New Zealand, Australia, Finland, France, Hong Kong, Portugal, Scotland, Taiwan, the UK and the USA. It found that the situation differed markedly in different countries, so has focused on national case studies of four transition points rather than a comprehensive comparison.

The transitions were from school to undergraduate courses; undergraduate to postgraduate courses, university into teaching, and university into other employment.

Results indicate that in New Zealand the number of school leavers qualifying in the mathematical sciences is increasing (see graph), as are the numbers of Bachelor, Masters and PhD graduates. However, mathematics graduates are a declining percentage of total graduates, and the median age for secondary mathematics teachers has grown to 45 - 49.

The project aims to provide data for educational decision making in different countries. Barton has presented results at conferences in Poland, Spain and New Zealand and the report is being finalised. The project will continue to update data from project countries and add other countries to the database.

See
www.mathunion.org/icmi/other-activities/pipeline-project/

