ISLP Newsletter

1(6) January 2013

in brief...

ISLPNewsletter is the newsletter of the International Statistical Literacy Project of the IASE – the International Association for Statistical Education.

Editors:
Reija Helenius (Finland)
Reija.Helenius@stat.fi
Pedro Campos (Portugal),
pcampos@fep.up.pt
Sharleen Forbes (New Zealand)
sharleen.forbes@stats.govt.nz

visit us at: http://iase-web.org/islp/

International Year of Statistics 2013

By Ada van Krimpen, ISI Director

We are at the beginning of the year 2013, which we will celebrate as the 2013 International Year of Statistics (Statisics2013). This initiative has opened up a huge energy and enthusiasm all around the world. One month before it starts over 1,200 organisations, statistical societies, universities, schools and statistical offices from over 100 countries have registered as participant and the amount of activities is rapidly growing. We are all excited by this and look forward to a year filled with vibrant and appealing activities. Among these activities are special conferences, workshops, campus activities, competitions. The ISLP Poster Competition which is being organised for the third time has proven to be an extremely successful formula to generate interest among students for the area of statistics. It fits seamlessly in the Statistics2013 objective "nurturing Statistics as a profession, especially among young people".

I am happy to announce that the Stastistics2013 Launch video can be watched on YouTube: http://youtu.be/nTBZuQR7dRc Have a look and see how the statistical profession is promoted in an attractive way. Use and distribute this video among all the organisations and people active in ISLP. You will have the chance to produce your own video and maybe you will be a winner of one of the attractive prizes. There must be good candidates among the ISLP participants! Produce your own four minute video and send in before 28 February. All this and the many events underway can be found at the www.Statistics2013.org website.

I encourage you to display the ISLP activities on the Statistics2013 website as it is one truly international event that deserves to get the widest possible attention. The winning posters of the ISLP poster competition will be displayed at the ISI World Statistics Congress in August 2013 in Hong Kong. The theme of the WSC is 'Youth' which provides lots of opportunities to focus on young people and to promote the profession among Young people as well.

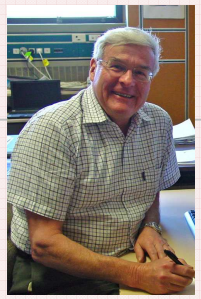
Poster competitions give young people an excellent opportunity to display their work and start building an international network. In Hong Kong we organise special topic sessions of interest for young people and a reception for Young statisticians. Prior to the congress a Young Statisticians Satellite will be organised at the campus of Hong Kong University. I hope to welcome many of you in our Hong Kong congress (www.isi2013.hk).

The Hong Kong Convention Centre where the ISI WSC 2013 will take place.

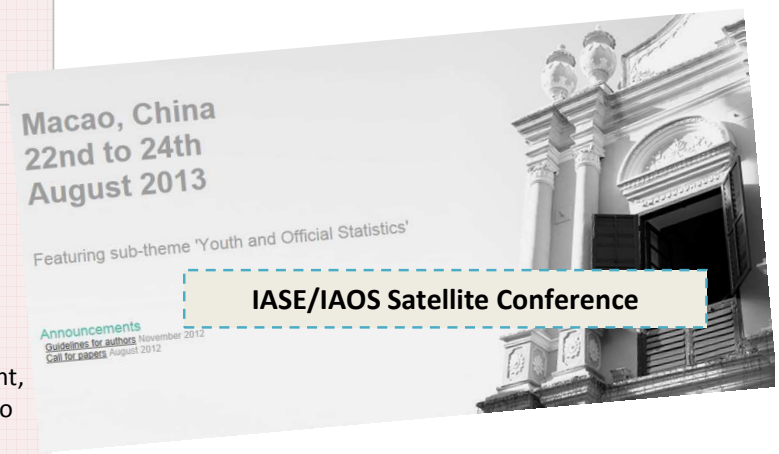
To give more visibility to the ISLP it will be displayed on the ISI website as one the 'special projects' of the ISI. We are convinced that this will increase the awareness among the statistical community for this important work.

I wish you all a wonderful 2013 and celebration of the International Year of Statistics.

International Year of Statistics Notes



By John Harraway,
President IASE and Chair of
the ISLP Advisory Board



The International Association for Statistics Education appointed Reija Helenius as IASE contact for the ISI Year of Statistics Committee. Reija as Director of the ISLP and Head of Development, Information Services, for Statistics Finland is in an ideal position to combine IASE and IAOS activities for the year of Statistics. It is essential for society to know the power of data, to know how to present data visually and to be aware of benefits that accrue from accurate presentation of information in the media, in published research and reports from National Statistics Offices. The International Statistics Literacy Project poster competition for example reaches out to 5000 school students in over 80 countries. Data visualisation, new technology for data analysis such as bootstrapping, study design, statistics learning and statistics literacy are introduced to society through education of the young and the consequential impact on their families. The theme of agriculture for the 2013 competition is particularly relevant during the Year of Statistics. Winning posters from National competitions will be judged by an international panel and the winning international posters will be displayed at the WSC in Hong Kong in August for all to see. The Best Cooperative Project is a second competition organised by the ISLP. Once again a prize will be awarded at the WSC in 2013 for the best cooperative practices involving statistics.

Prior to the World Statistics Congress in Hong Kong in 2013, where there are 14 Invited Paper Sessions on Youth and statistics education, a joint IASE/IAOS Satellite Conference in nearby Macau represents a further contribution to the Year of Statistics. A call for papers has been announced and presenters have been asked to contact Sharleen Forbes in the area of official statistics and Brian Phillips if their presentation relates to statistics education. Details are at www.conkerstatistics.co.uk/iase2013. All submissions addressing the overall theme 'Statistics Education for Progress' and the special theme on 'Youth and Official Statistics' are welcome. Statistics Education for Progress' topics could include:

1. Building upon successful projects
2. Enthusing youth
3. Enthusing teachers
4. Statistical improvements in the workplace
5. Big data and statistics education
6. Statistical education using advanced technology
7. Statistics and social networking

'Statistics Education for Progress: Youth and Official Statistics' Topics include:

1. Official statistics resources for school or tertiary education
2. Disseminating official statistics into the real world of youth
3. Training young statisticians
4. Educational uses of youth statistics
5. Collaboration in statistical education by academia and official statistical organisations
6. Educating the general public through the dissemination of official statistics

The ISLP Project Promotes Worldwide Co-Operation in the Field of Statistics

By Reija Helenius
ISLP Director
Head of Development, Statistics Finland

The past year has been an important step for ISLP towards ever expanding co-operation among actors in the field of statistics on all continents. Our Country Coordinator network already has over 100 actors. The International Year of Statistics 2013 will provide more momentum for our co-operation network. Currently, a poster competition for young people is being held and the best cooperative project 2013 in the field of statistics is sought. We are also preparing a strategy to promote statistical data to cover most aspects of life, from citizens to decision-makers.
The latest ISLP Newsletter includes articles, examples and experiences on promoting statistical data from different actors in the field of statistics. This is one way we can learn from one another. Also, take a look at our revised home page.
ISLP would like to thank all co-operation partners and Country Coordinators. Let's celebrate the International Year of Statistics 2013 together by promoting statistical literacy and user skills as a united front.
Wishing everyone an energetic year of co-operation in 2013.

UNECE Activities in the Field of Statistical Literacy

UNITED NATIONS
ECONOMIC COMMISSION FOR EUROPE

By Lidia Bratanova, Director, Statistical Division United Nations Economic Commission for Europe

We live in a world where we are increasingly surrounded by data. Each day we are bombarded with numbers, percentage rates, probability ratios and ratings. Understanding the data, where they come from and what they are saying is critical to understand society. However, not many people are equipped with adequate knowledge to really understand the numbers and critically evaluate the data. As technologies continue to develop, statistical literacy - the ability to understand and comprehend statistics is becoming even more important.

To address the challenges and opportunities presented by the growing importance of data, the Statistical Division of the United Nations Economic Commission for Europe (UNECE) works to promote and increase statistical literacy in its member states. Among notable works in this field is the series of publications "Making Data Meaningful" which aims at helping a wide range of users and producers of statistics to acquire certain skills when dealing with statistical data. We are about to publish the most expected issue of this series dedicated to statistical literacy.

Over the last year the UNECE has been working on developing "Making Data Meaningful. Part 4: A Guide to Statistical Literacy." It is a result of intensive work by statistical literacy specialists from eight countries. The guide provides a comprehensive overview of current initiatives in the field and defines strategies for improving statistical literacy among different groups of users.

Dividing the users of statistics by their level of knowledge and their purpose for using data, the publication specifically deals with statistical education of opinion leaders, decision makers, education community, respondents, businesses and general public. The guide also covers methods for improving statistical literacy within statistical organizations, and developing statistical dissemination activities in ways which encourage a better understanding of statistics.

Finally, the publication outlines approaches to evaluate the impact of statistical literacy activities and provides the most widely used and recommended measurement criteria.
With "Making Data Meaningful. Part 4: A Guide to Statistical Literacy," the UNECE hopes to promote and encourage future work in this field and provide statistical organizations with a valuable reference in strengthening their activities in endorsing and promoting statistical literacy.

Along with this, the UNECE Statistical Division will mark the International Year of Statistics in 2013 with organizing a work session on the communication of statistics that will be held in Berlin, Germany, at the end of May. The work session will gather representatives of national statistical offices and international organizations from different countries to discuss the latest trends and share experiences in communicating statistics to people and educating different users about the importance of data. This annual work session has been very popular with statisticians and communication experts and has attracted a wide range of professionals.

"Making Data Meaningful. Part 4: A Guide to Statistical Literacy" can be downloaded at http://www.unece.org/stats/documents/writing/

The print copies of the guide will be available in the first quarter of 2013 and can be ordered by sending an e-mail request to support.stat@unece.org
To know more about the Work Session on the Communication of Statistics, visit the meeting page at http://www.unece.org/stats/documents/2013.05.dissemination.html

International Year of Statistics 2013 at the OECD

By Martine Durand, Chief Statistician, Director of OECD Statistics Directorate

The OECD, as a major player in the field of statistics, welcomes the opportunity to take part in the celebration for the International Year of Statistics 2013. This celebration provides a unique way for the OECD to showcase some of its innovative statistical activities and show how these activities help raise public awareness of statistics generally and more importantly how statistics can have an impact on all levels of society.

One of the goals of Statistics2013 is to help citizens better understand the power of statistics and how statistics play a major role in everyday life. In the current economic climate, and for example the squeeze on government spending, it is even more important to forge these links and provide people from all walks of life with a better understanding of the impact of statistics on their lives.

According to the OECD, in 2009, OECD countries spent on average 6.2% of their GDP on educational institutions at the pre-primary, primary, secondary and tertiary levels. While certainly at the primary and secondary levels the topic of statistics is introduced to students in most countries, more can probably be done in encouraging students to better understand and utilise the statistics around them and so increase their statistical literacy. A gap would also seem to exist at the tertiary level, with for example few instances of faculties offing courses in national accounts or on economic or social measurement; this type of statistical learning is traditionally the domain of national statistical institutes, thus lessening its reach. Redressing this issue could be central in helping education better equip students to be an active part of statistical society.

Statistics2013 provides all compilers of statistics, both at the national and international levels, with the opportunity to help the public better understand how the world around them is changing and where they fit into this evolving new world. Individuals today are bombarded with statistics (and information) from all sides, much more so than in the past. This constant and unrelenting flow of data makes it more challenging for people to focus on what is important and what matters to them. The ability to make decisions on evidence-based knowledge gets fragmented and lost in this overflow of information. It is the responsibility of organisations, like the OECD, to take the lead in rationalising and concentrating the statistics on offer so that citizens and decision makers can be confident to rely on relevant and high-quality information.

The OECD has always been an innovative producer of statistics, both through the investment in new statistics and through the provision of a statistical benchmark to countries. The OECD continues to pioneer new initiatives. For example, statistics are being developed to better understand how globalisation and trade flows translate into jobs and skills.

The OECD is also looking at what statistics are needed to better measure people's well-being through its Better Life Initiative. The Better Life Initiative includes an interactive web-based "Your Better Life Index" allowing anyone to compare well-being across countries according to the importance they give to the various dimensions of people's well-being; an excellent example of an initiative that makes statistics accessible in a clear and simple form for all. It is also a good example of statistics with direct relevance for people's lives, in contrast to some macro-economic statistics (e.g. GDP) that have tended to dominate statistical communication over the last 60 years. Indeed, the ability for individuals to see how they and their country compares in regards to indicators such as, for example, housing, jobs, education, life satisfaction etc., provides a direct and visual understanding of the importance of statistics. Disseminating statistics that address the concerns of individuals while at the same time allowing individuals to "play" with the statistics is vital in advancing statistical literacy.

Another way that the OECD attempts to advance statistical literacy is through its suite of Wikis - Wikiprogress, Wikigender and Wikichild. As web 2.0 platforms, the wikis allow easy browsing and exchanging of information and data. A key purpose is to invite and inform all parts of the community, through the creation of a wiki, on the debate on e.g. progress, gender etc. through research and statistics. Mass collaboration through a centralised communication tool that encourages discussion on statistics and statistical understanding would appear critical in spreading statistical literacy.

To celebrate the International Year of Statistics 2013, the OECD plans to organise a special day for all users of statistics, including citizens, parliamentarians, statisticians, researchers, analysts and policy-makers to showcase the latest innovations in its statistical work. The day will include a series of dynamic presentations and an exhibition featuring some of our key ongoing initiatives. The aim is to bring together users and producers of statistics from all walks of life and help them better understand not only the statistics that the OECD is producing but also how statistics can influence all aspects of society.

Hungary

Statistical Actions and Events in Hungary

By Peter Kovacs, Assistant professor, Department of Statistics and Demography, Faculty of Economics and Business Administration, University of Szeged

To improve statistical literacy, several lectures were organized in Hungary in 2012.
Every September, the universities organize the Researchers' night where they open their gate to the public and researchers hold lectures. At the University of Szeged, Peter Kovacs spoke about the importance of statistical literacy. Statistical quotes and interesting statistical problems, mistakes and funny statistical data were mentioned.
The Hungarian Central Statistical Office (HCSO), The Hungarian Statistical Association (HSA) and the Budapest Business School has organized the second season of statistical lectures for college students where Hungarian experts hold lectures on various statistical topics. For example on labor force statistics (2011), statistical literacy and (2011), online statistical databases, and publications (2012).

A Hungarian research team of the University of Szeged examined the 14-20 aged students' financial literacy (the sample size was 5700 in 2011 and 10500 in 2012). At the end of this work 3 things were recommended to the Hungarian educational government. One of them was that the use of the statistical data and the development of the statistical literacy are also very important during the teaching of financial subjects and definitions.

In 2012 the Hungarian Statistical Association celebrated its 90th anniversary. On this occasion a conference was organized in November.
In 2013 several statistical events and lectures will be organized in Hungary as well. The 29th European Meeting of Statisticians will be held in Budapest, 20-25 July (http://www.ems2013.eu). This event is organized by the European Regional Committee of the Bernoulli Society.
Next year we plan to organize more statistical lectures and games in the Researchers' Night and a statistical day for secondary school students in Szeged.

Mexico

Statistics Literacy Competition in Mexico

By Hugo Hernándes Trevethan, Universidad Nacional Autónoma de México

Mexico is participating for the third straight time in the Statistics Literacy Competition. The first time it was with two competitors, the second time with three competitors, and this year it seems that we will be able to have around ten participants, or even more. This, I hope, starts to show an exponential tendency.

But, beyond joking, having more participants, especially this year, makes me optimistic.

I am totally aware that Mexico is a very statistical illiterate country –in fact, it's a very illiterate country-, but for the last 13 or 14 months we had a kind of fever for statistics, since we currently have the campaigns and the election for the next presidential term. A sad result was that we were suddenly "statistics-freaks" and "statistics-experts".

Everybody was discussing what the polls were saying about the possible outcome of the election, starting with the four candidates that we had. All of them had their own "serious studies" showing that each would be the next president. It obviously was an amazing collection of misconceptions, bad inferences, and wrong ideas about statistics, sampling, inference, polls, and measures and so on. Suddenly whole statistics illiterate country was, out of the blue, a set of 112 million "experts". It came to the point that everyone had their own predictions, their own statistics, and their own irrefutable proofs about the election outcome…. proofs such as "I've opened a poll in my Facebook wall, and it shows, irrefutably, that the outcome is going to be this or that".

At the end, the outcome was as the serious investigation projects, carried out by private offices of statistics services, predicted. Results, I must say, that were dismissed by almost everyone since the very beginning because these were not what they wanted to be.

The result was a disgrace for Statistics in our country, I say it again, in our country, this science is almost forgotten. Huge population sectors, media, political associations that lost the election, and so on blamed it on statistics that the results were different from their "predictions" obtained by their Facebook "polls" or by asking their neighbors, or so on. "Statistics is useless", "Statistics is worth for lying and nothing more", "Statisticians are a waste among people" became very popular sentences after the election, and still are. What can we expect from such a statistics illiterate country?

But even after such a sad picture, we have more students involved than the last two competitions, and a researcher in the north of the country has contacted me in order to get involved in our project, becoming a strong support for the ISLP in Mexico.

Let's hope this is a real tendency that aims to make things better for statistics in Mexico at least in the mid-term, based on serious interest in Statistics among some sectors of our statistics illiterate population… let's hope and let's work hard for that.

Mauritius

CensusAtSchool in Mauritius

By Li Fa Cheung Kai Suet, First Deputy Director, Central Statistics Office

The CensusAtSchool project aims at improving the statistical literacy of students and combines fun with learning. Statistics Mauritius conducted the project in collaboration with the Ministry of Education and Human Resources in primary and secondary schools in 2011 and 2012 respectively.

CensusAtSchool in primary schools

The project was conducted in 18 primary schools in 2011. Its main objective was to promote statistical literacy and build awareness on the 2011 Housing and Population Census. In each school, one class of Standard V students aged 9-10 years, selected by the headmaster, participated in the project.
Each school was visited twice. On the first visit, staff of Statistics Mauritius gave a simple presentation on data collection, and why and what are statistics. The concepts were illustrated through a small class exercise during which students were administered a small questionnaire on 'Kids favourites' on fruits, colours, subjects, etc. Students were also explained about the 2011 Housing and Population Census and they were asked, together with their family, to later fill in a simple 'Mini Survey' questionnaire comprising 11 questions pertaining to their family members, housing conditions and amenities available at home.
On the basis of the information collected, a mini-survey report was prepared for each school and consisted of simple write-up with colourful graphical presentations.
At the second visit, staff of Statistics Mauritius presented the survey results to the students while indicating to them the importance of having such statistics and their implementation in policy decisions.

Staff of Statistics Mauritius presents survey results to primary school students

CensusAtSchool in secondary schools

Drawing upon the success obtained in primary schools, Statistics Mauritius extended the CensusAtSchool project to 9 secondary schools in 2012. The objective was again to boost statistical literacy and also to encourage appropriate and valid use of statistics. In each school, one class of Form 4 students aged 14-15 years participated in the project. The students were showed how to collect, process and interpret data as part of their classroom learning in Maths or IT. They carried out two activities; the first one was to verity Leonardo da Vinci's theory that a person's height is equal to his arm span. For the second activity, the students developed a CensusAtSchool questionnaire on areas on interest to them and administered the questionnaire to fellow students. They processed the data and prepared a report on their findings.

Students measure arm span as part of CensusAtSchool activity

As an incentive to the students and their teachers to produce a good report, Statistics Mauritius awarded a trophy to the school submitting the best report.

The Best Cooperative Project Award in Statistical Literacy

is awarded every two years, in recognition of outstanding, innovative, and influential statistical literacy projects that affect a broad segment of the general public and are fruit of the cooperation of different types of institutions (national statistical offices, schools, statistical societies, media, libraries etc.).

Closes 31st May 2013

More information:

http://iase-web.org/islp/Activities.php?p=Best_Cooperative_Project_2013

ISLP Poster Competition 2012-2013

closes 12 May 2013

http://iase-web.org/islp/Poster_Competition_2012-2013.php

The **Wakimoto Memorial Fund** will sponsor the awards for the ISLP Poster Competition for a total amount of € 3,500. Prizes in both International Competition divisions are: 950 for 1st, 500 for 2nd, 300 for 3rd team. More information on the ISI webpage: http://www.isi-web.org/recent-pages/634-2013-jan-wakimoto-memorial-fund

Gis Day In Estonia

By Aime Lauk, Senior Consultant of the Information and Marketing Service, Statistics Estonia

Since 2005 the International Geography and Geographic Information Systems Day (GIS Day) has been celebrated in the National Library of Estonia. The idea was initiated by a specialist from Statistics Estonia.

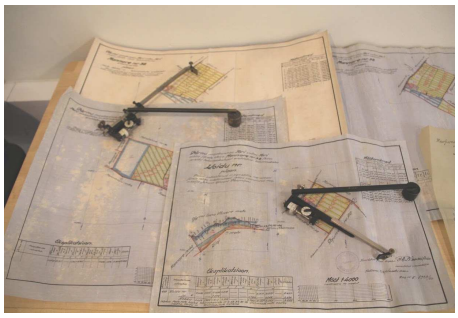
Since then GIS Day has been held each year in the third week of November on Wednesday in the National Library of Estonia www.nlib.ee. GIS Day is organized by the Estonian Geoinformatics Society, Statistics Estonia, the National Library of Estonia and the Estonian Land Board.

The complete programmes, presentations and other information is available on the website http://www.gispaev.ee
GIS Day has become the largest GIS event in Estonia targeted mainly to educational and academic institutions.

This event includes a conference, thematic exhibition, trainings, etc. GIS Day is also an excellent meeting point for specialists in the field, students, teachers and schoolchildren.

The aim of the International GIS Day celebrations is to create awareness on geography, geoinformatics, cartography and other disciplines related to these subjects, raise the geographic literacy in schools and educational institutions.

Geographical literacy and statistical literacy are connected and with this day we can promote GIS in Statistics Estonia – geo-referenced statistics, maps, different databases and our products and services.



We have practised a quiz among the participators for several years already. The quiz enables to involve the participants (mainly teachers and students) and at the same time introduce different data sources and familiarize the participants with statistics. GIS Day quiz consists of the questions in the field of regional and European statistics and the questions include different fields of statistics, metadata and map information.

The quiz should be educational and exciting.

For example – please record the Estonian capital of the cold on the map and the additional question is “Do you know what is the official record of cold? (Jõgeva, -43,5C in 1940).
80 correctly answered quizzes have been returned.

Statistics Estonia has made thematic maps for about 90 years as thematic maps have been used since the first Republic of Estonia while presenting statistics. Thematic maps enable first and foremost to show the regional indicators, to present simply and clearly the spatial and temporal relationships between many statistical indicators. Thematic maps are relevant in presenting statistics.

Thematic maps presented on the website of Statistics Estonia provide statistics on different subject areas of the European countries, as well as counties and local government units of Estonia. In the framework of GIS Day and GIS week four GIS-specialists from Statistics Estonia introduced GIS to geography teachers and made presentations in different high schools in Tallinn. The presentations were connected to the new study programme of the high school geography. The following topics were introduced:
- Statistics eXplorer;
- different thematic maps;
- maps on the web site of Statistics Estonia;
- drawing the thematic maps with the free software QGIS, linking it with the data of Statistics Estonia at local government level as well as with the grid maps’ data.

GIS Day enables a direct feedback from different user groups and it is very valuable. GIS is rapidly developing field and GIS Day gives different organizations an opportunity to reach to specific target groups at the same time.

Slovakia

Evaluation of Educational Quality at Primary and Secondary Schools in the Slovak Republic, within the Context of the Current Proceeding Educational Reform

by Katarína Luèenièová, Ing.

National Institute for Certified Educational Measurements, Bratislava

Realization of specific objectives of project based on the aims of the Call leads straight to the higher quality of educational and study programs, to the innovation of methods for evaluation of students' performances at schools, to the higher level of outputs at particular stages of education and to the creation of an effective system for evaluation of the situation and progress in the educational system of the Slovak Republic, by which the strategic aim of the project is attaining. Not only students of primary and secondary schools are in the sample, but also the pedagogical staff and other employees working in the educational field.

Research of the intervention for increasing the statistical and financial literacy of students in Slovakia at the ISCED level 2 is one of the project's main activity. The aim of the activity is implementation of processes in the educational research into the practice at the Slovakian schools. This implementation is based through the development and by the verification of an instruments and procedures designed for evaluation of the statistical and financial students'literacy. The main task of this activity is defining the range of statistic and financial literacy with respect to the basic educational aims in the field of mathematics and also the realization of the verification of already created instruments related to this issue. We have already done several phases in this realization of activity. Expert group has been put together, on our own initiative, for the development of tools for measurements. We organize trainings and workshops for teachers, with help of experts from mathematics and financial and statistical literacy.

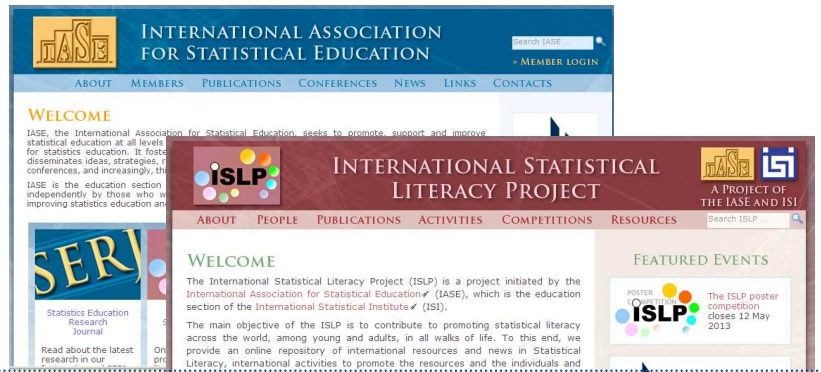
Expert group for creation of the instruments for measurements has been established and also teachers have been trained for preparation, realization and evaluation of their own intervention programs.

In 2013 (in the year of the international statistics), "Zbierka úloh na rozvíjanie ¹tatistickej gramotnosti" will be published -book which is compound from the tasks designed for improving the statistical literacy. Participation of schools teams in the international competition ISLP –Poster competition 2012-2013 is intended as a final of this activity.

New ISLP and IASE web sites released

ISLP page coordinators will be nominated soon!

http://iase-web.org/islp/
http://iase-web.org/



Promotion of the Statistical Literacy – Young Statisticians' Proxy

Maxim Balakhnev, Deputy Chief of IT Division Rosstat regional office in Orel, ISLP coordinator in Orel region

On September 11, 2012 the International seminar for young employees of official statistical services took place at the National Academy of Statistics, Accounting and Auditing of Ukraine (Kiev).

Young statistics from Russia, Ukraine, Hungary, England and Qatar became acquainted with the best practices of European official statistics organizations , and gained practical skills in visualization and dissemination of statistical data.

Mariana Kotzeva (EUROSTAT) in her lecture "Websites as a channel for disseminating and communicating statistics" considered in detail the organization of web access to statistical data for different groups of users, such as advanced researchers and analysts, and without special training. Vadim Isakov (UNECE) made a presentation "Writing stories about numbers" and drew the audience's attention to a series of publications,"Making Data Meaningful".

Per Nymand Andersen (ECB) spoke about methods of visualizing data that make the statistics interesting and understandable to the non-professionals and help to increase the number of users of statistical services in his talk, "Statistics and visualisation: Presenting statistics to external users". Ms Lauren Bennett (ESRI) presented her lecture "The Power of spatial analytics" in the final module.

Numerous examples of the use of spatial analysis and visualization and a free tour of the web resources, GIS software products and their brief description, opened new opportunities for young statisticians' visualization of statistical data. At the same time, users' perception and interpretation of statistical data is the focus of statistical literacy.

One of the sessions at the IAOS Conference on Official Statistics which took place from September 12 to 14 in Kiev, "Getting Our Messages Across-Strategies and Best Practices to Ensure the Use of Statistics in Decision Making", was devoted to statistical literacy.

The Chairman of the session, the head of the statistical department UNECE, Lidia Bratanova, introduced a Belarus statistics text for junior students, and noted the increased attention to the problem of students' statistical literacy in many countries.

The Director of the ISLP, Reija Helenius, talked about the activities of this project and the activities implemented in its framework, in particular, the international statistical poster competition for students.

Vadim Isakov presented the edition "A guide to improving statistical literacy" from the series "Making Data Meaningful". John Harraway, President of the International Association for Statistical Education, spoke about the interaction of universities and official statistical service of New Zealand in his report "Working with academics to increase official statistical literacy: a partnership". The head of Rosstat, Alexander Surinov spoke about the interaction of the official statistical service of Russia with the media, businesses, government and the work of the Public Council under Rosstat.

In discussing the reports Maxim Balakhnev expressed his wish for Rosstat to participate in the ISLP project suggesting that. the most active young statistics in every region This would not only give great importance to this competition, but also promote the activity of official statistical service.

Initiatives of young statisticians often find support at the Federal State Statistics Service, which does not formally take care of young professionals. Thus, a meeting of IAOS participants took place at the Federal Interagency Training Center Rosstat in Gelendzhik (Krasnodar region) from 8 to 11 October. Young statistics from various regions of Russia (from Krasnodar region to Vladivostok) presented their research papers, getting conference presentation experience , shared their achievements in the field of official statistics, and discussed the problems that arise in their professional life.

The issue of enhancing the statistical literacy of the Russian population was touched upon at the meeting. The participants of the conference agreed on the necessity for close cooperation with schools, as it is mainly at school that the formation of a literate, including statistically literate personality begins. We hope that in the nearest future, thanks to the initiative of young statisticians, all regions of Russia will be presented in ISLP project.

International Year of Statistics 2013 - Australian Bureau of Statistics

The Australian Bureau of Statistics (ABS), Australia's official statistics agency, will be actively celebrating the International Year of Statistics in 2013. Three key activities will highlight the important role that statistics plays in shaping our nation's development, the wellbeing of our citizens and the importance of being statistically literate; the NatStats 2013 Conference, the release of the outcomes from the Essential Statistical Assets for Australia initiative and the launch of the refreshed Measures of Australia's Progress.

The **NatStats 2013 Conference** will be held at the Brisbane Convention & Exhibition Centre, South Bank, Brisbane, Australia on 12-14 March 2013. The conference theme is "A better informed Australia: the role of statistics in building the nation" and will explore how statistics are critical in informing the decisions which shape our future. NatStats 2013 will build on the enthusiasm and passion generated throughout the previous two NatStats conferences held in **2010** and **2008**.

An exciting **program** is being designed with policy and decision makers in mind with a focus on the opportunities that "Big data" presents for informing the nation. Senior staff from policy departments, academia, community organisations and the private sector as well as key international speakers will be invited to provide their perspectives on the role of statistics in building the nation across policy domains. It is expected that over 500 delegates will participate in NatStats 2013, bringing together an array of leaders and high profile commentators, researchers and policy makers from all levels of government, academia, community and business. NatStats 2013 will continue to build a collaborative approach to enhancing the national statistical system in Australia.

Essential Statistical Assets for Australia

INVESTING IN THE INFORMATION THAT COUNTS MOST

In November 2010 the Australian Statistical Advisory Council endorsed that the ABS, as part of its legislated role to coordinate the provision of official statistics across the National Statistical Service should:

"… set out to identify, in a highly consultative way, the Essential Statistical Assets for Australia, regardless of which organisations produce them."

Developing a list of agreed essential statistical assets and their underlying datasets, would enable the Australian Government, in partnership with state and territory governments, to pursue the following objectives:

i. The efficient use of government resources by identifying areas of duplication and underutilisation

ii. Ensuring that the critically important information (statistics/data) are of sufficient quality, and

iii. Identification of critical information gaps, so that these can be addressed.

The outcomes of this strategic initiative will be released in March 2013 as part of the NatStats Conference.

Measuring progress - providing information about whether life is getting better - is perhaps one of the most important tasks a national statistical agency undertakes. In November this year the ABS launched '**Measures of Australia's Progress - aspirations for our nation: a conversation with Australians about progress'** report. The report is the result of a two year consultation process between the ABS and a wide variety of Australians. The aim of the consultation was to review Measures of Australia's Progress (MAP) to check whether we are still measuring what people think is important for progress.

This publication provides an account of how the consultation was run and the feedback that has been received. It highlights the ABS' use of social media, including the successful use of the MAP 2.0 blog, to engage new audiences. It provides a record of the broad consultation undertaken with individuals, organisations and governments across the nation and presents an overview of other key national and international progress measurement initiatives.

As part of the International Year of Statistics in late 2013 the refreshed **MAP product** will be released with the new indicators as identified from the consultation.

These and other initiatives across Australia's jurisdictions will be used to progressively announce the ABS' commitment to promoting the critical role of official statistics and statistical literacy in helping shape Australia's future.

ISTAT and Statistical Literacy

By Enrico Giovannini, President of the Italian Statistical Institute (Istat)

Statistical literacy, defined on a worldwide scale as the skill of understanding and correctly using statistical data, is an ability that transforms people into citizens capable of living in the information age, i.e. individuals able to read and critically evaluate data and statistical information. Istat has always been actively engaged in disseminating statistical culture through projects for members of public but today statistical literacy has become a key objective to achieve its mission. For this purpose in 2011 the "*Advanced School for statistics and social and economic analyses*" was set up. The School represents a significant novelty for Italy. It is mandated to offer professional training in the fields of statistics and economic and social analyses and promotes statistical literacy especially among young people, journalists and citizens.

Journalists and information management specialists can be extremely important allies to improve statistical dissemination and communication. They are mediators between experts and the general public, therefore they need to distinguish between high quality and bad quality statistics. This capacity cannot be taken for granted, nor can the ability to use innovative visualisation tools, and it is in this area that the School can play an important role by teaching journalists how to better perform their job. The goal of the teaching program is to bring journalists, especially the young ones, nearer to statistics; at the same time knowing how to deal with data could become a competitive advantage for them. Therefore, Istat has recently organized the first workshop "Data Journalism School 2012", addressed to young student journalists, in co-operation with an Italian Foundation focused on the quality of information emerging from today's social networks and digital media.

Regarding young people, who represent the citizens of tomorrow, schools are obviously the best *link* for contacting them. Therefore, Istat works with teachers in order to: a) better understand the problems they face in teaching statistics in class; b) to develop learning and collaborative environments more conducive to statistical knowledge. Istat's current strategy is to find out innovative didactic solutions, which can be developed in a standardized way, made available on the Web and used by schools and young people in general. Of course, the use of the Web is vital in order to catch the attention of *digital natives*. Accordingly, Istat is creating a virtual laboratory - OpenLab, an innovative tool to develop statistical skills. The OpenLab is designed to be a workroom for statistical knowledge and it will be open to teachers' and students' contributions through an online platform and with the help of interactive and dynamic visualization tools.

Finally, the 15th General Population and Housing Census has been an important opportunity for Istat to make young people aware of the social importance of statistics. Students of all ages (both young and very young) have been involved in Census-related activities in a friendly way, with the aim of reaching two essential goals: improving their statistical literacy and, at the same time, making them promoters of Census within their families.

Istat has been fully engaged in the activities of ISLP since 2010, both with regard to the ISLP Poster Competition and through the participation in two task forces, *Universities and research institutions* and *Educational institutions* (secondary school and upper secondary school students), in the latter case with a leading role.

Investing in statistical literacy is a must for statistical offices, in order to increase their 'value added'. Istat takes these projects very seriously and is ready to foster collaboration with other national and international partners in this field.

Does Statistics Play in Italy an Important Role in Scholastic Curricula?

How do teachers consider statistics in Italy?

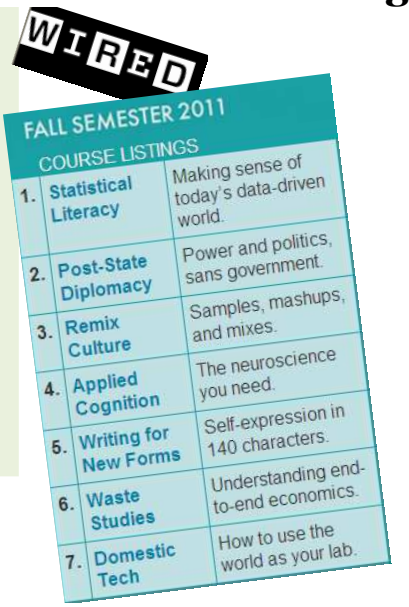
By Marina Peci, Senior Researcher, ISTAT

Although statistics in Italy is present in many school programs and in academic curricula, very often it is not taught well. The reason for this derives from the fact that statistics is not part of our cultural tradition. In many other countries there is awareness of the crucial role of statistics in modern societies but Italian culture is historically *allergic* to numbers!!! Therefore, statistics is seldom taught in classrooms. Many teachers do not consider statistics in their programs and prefer to dedicate their time to other subjects. There are also other reasons for this lack of interest: teachers do not know statistics very well, except possibly mathematics teachers.

We need to encourage those who say that they do not have time, motivation or interest in teaching statistics and also those who would like to teach it but do not know how to do it. This is an important part of our *mission* in Istat (Italian National Institute of Statistics). There are two risks in teaching statistics in classroom: doing it in a banal way or, on the contrary, being too technical and, in doing so, make statistics not very appealing for young people. We are convinced that teaching statistics in schools is important from the very start, when students are young, because statistics feeds critical thinking that focuses on identifying and evaluating arguments supporting the truth of disputable claims. We are also convinced that statistics can animate mathematical concepts and make them more interesting for students.

As stressed many times in the *European Qualification Framework for lifelong learning*, in order to facilitate learning it is fundamental to make contents closer to students' world and statistics can do this easily: it can facilitate the passage from abstraction to the reality of a phenomenon, leading to the acquisition of competence. To obtain this it is necessary to use active didactics and a problem-solving approach. Finally, we totally agree with Wired about the *7 Essential Skills You Didn't Learn in College*: statistics is among them because it is very important that young people *know how to swim through the data deluge*: therefore, statistics must be considered not only a technique but also an important support for life.

7 Essential Skills You Didn't Learn in College



Statistics Receive Their Meaning Through Their Use

By Marjo Bruun, Director Geneneral, Statistics Finalnd

One of the key functions of Statistics Finland is to advance the use of statistics and above all, to utilise statistical data in different sectors of society. In order to succeed in this mission, statistical experts must know both the users and their needs. Recognising customer needs is challenging, because there are many groups of customers, from expert users to ordinary people and from heavy users of statistical data to one-time information users. Statistics Finland aims to serve all of its user groups. We develop our services for each user group, and our current target groups are researchers and research institutes.

Developing the entire statistical process is of vital importance. Common factors combining the various stages of the statistical production process are customers, the users of statistics. We want to offer users high-quality statistics on time, in the correct form and in an easy-to-understand mode. The statistical data delivered to customers requires good co-operation between our statistical experts and information service specialists. Development work is made in different parts of the statistical process, all the way from the acquisition and processing of data to the end product offered to users.

Statistics Finland promotes the use of statistics in various ways, such as by offering training services, by developing self-services on the web, by networking with different customer groups, by popularising statistics through articles and visualisation, and by providing versatile information services. Guaranteeing a well-running process and good service also calls for training of statistical experts and investing in continuous development and diversification of professional skills and competence.

Statistics Finland will open the Year of Statistics 2013 coordinated by the ISI right at the beginning of the year with a large stakeholder event. Over the year, we will also bring statistics into highlight through our active communication and information services. We will publish on the web topical articles on statistics interesting to large target groups, we will arrange briefings and seminars, and offer our experts to lecture at educational institutions. We will organise Year of Statistics 2013 events together with such stakeholder groups as universities, research institutes, other producers of statistics, the Finnish Statistical Society, and the Finnish Association of Teachers of Mathematics, Physics, Chemistry and Informatics.

We at Statistics Finland consider it important to be involved in developing and distributing skills that advance the use of statistics also internationally. We believe that we can learn from each other and thus multiply our resources through good co-operation. In recent years, Statistics Finland has contributed significantly to the ISLP project. Since 2009, the project has been coordinated from Finland. The ISLP project develops operating models for statistical literacy that will hopefully benefit both developed and developing countries. As one example of this, I should mention the currently ongoing International Statistical Literacy Competition for young people for which we again expect participants from all continents.

Active marketing of the poster competition both in Finland and abroad will also be one of our activities during the Year of Statistics 2013.

Ukraine

In the celebration of the International Year of Statistics 2013

By Anna Anisimova, Senior Lecturer on a chair of Economic Statistics in Donetsk National University

As part of this event Ukraine will hold a competition for scientific research students on statistical methods in economics. This will held under the patronage of the Ministry of Education and Science, Youth and Sport of Ukraine in the spring of 2013. In addition, the Ukrainian Contest on Statistics held annually in economic statistics for students who are studying at one of the universities. Every year different universities present their results of statistic research and compete for the best student and the best research. For younger colleagues, high school students in the Donetsk National University and other universities in Ukraine held the "School of the Young", that allows students to use the basics of statistical studies to reveal an interest in statistics in our lives, to show all aspects of life and also the way statistics knowledge is used in practice. Ukraine also participates in the ISLP: the Department of Economic Statistics, Donetsk National University, together with the State Statistics Service in the Donetsk region held the national stage of the student poster competition.

News from Saudi Arabia

By Alaa Althubaiti, Assistant Professor, College of Medicine, King Saud University for Health Sciences

The use of statistical methods became vital to find solutions for many issues of interest to the community as health, education, agriculture, industry and trade. The development of new needs in a society should coincide with development in the statistical methods for studying those needs. However, this is not commonly the case. Mainly traditional approaches are used. Few researchers apply the "modern" trend of statistics, partly because new approaches are usually presented in large conferences or symposia outside the country. This has a direct impact on the statistical awareness among those not lucky enough to attend such events.

In addition, accurate statistical terms are rarely used in the planning system and decision-making. Hence, crucial communications are needed between decision-makers on one hand and producers of statistical indicators on the other hand.

Few efforts have been made to promote the importance of statistics. The Central Department of Statistics and Information (CDSI) commonly takes major actions. The centre is entrusted with the responsibility of determining the statistical requirements by all government agencies and private sector institutions. Recently CDSI celebrated the Statistics Day on October 20th, 2010.

World Statistics Day

Service • Professionalism • Integrity

The sector of statistics and information consists also of statistical units formed within the administrative structures of government agencies and some private sector institutions. Statistics is introduced to young Saudis in their secondary education as a part of Mathematics. The students are taught the basic statistical concepts. More advanced statistics is given as a compulsory subject in higher education. Students are encouraged to participate in local and international competitions.

Recently, the Ministry of Education and the Foundation "Talent" organized the First Gulf Mathematics Olympiad on April 2nd – 6th, 2012 in the United Arab of Emirates. The winner of the gold medal was a student representing the team from Saudi Arabia.

The task of promoting the importance of statistics is enormous. It requires a working group of individuals with sincere interest in the job. The target is to demonstrate how statistics has a huge effect on our daily life. The International Year of Statistics, 2013 will be an excellent opportunity to further promotes this.

Here are some of the steps to be taken:

1. Posters bearing the logo of the International Year of Statistics, 2013 to be posted at entrances of universities, higher education conferences and governmental sectors.

STATISTICS2013.ORG

العام العالمي للاحصاء

2. Sending letters to government agencies and major private institutions to inform them about the event and solicit their cooperation.

3. Contacting the ministry of education to brief them on the Statistical Literacy Project and its relevant page.

Statistical Education Developments in Georgia

By Nana Aslamazishvili, PhD, Head of Monetary Statistics Division , National Bank of Georgia

Introduction

As a famous English author H.G. Wells once said, "Statistical thinking will one day be as necessary for efficient citizenship as the ability to read and write". However, statistics is quite a specific area of activity and to understand it demands specific knowledge and skills.
For almost over two decades, Georgia has achieved significant progress in the implementation of internationally recognized statistical standards. However, despite a greater demand for statistics, there still is a critical shortfall in the national efforts to develop appropriate and sustainable statistical capacity. On the other hand, it should be noted, that statistical literacy in Georgia leaves much to be desired. Of course, internationally recognized manuals and guidelines on statistical frameworks are now available for different areas of statistics. However, the Georgian reader can easily be overwhelmed by the very size of them, their technical content and, in most cases, their language. Moreover, users need more and sufficient information about statistics and its production techniques in particular areas to make sure provided data are relevant.

This paper describes how we try to deal with challenges concerning statistical literacy developments in Georgia.

I. How to transfer statistical knowledge popularly and at the same time by in an academic way?

Georgia is a small country with open economy and too short history of independence. The history of statistics of independent Georgia is not long. In such circumstances it is very difficult to integrate with the rest of the world successfully without having the right priorities regarding statistics. On the other hand, the wider society is also authorized to know more about statistics and its purpose and benefits. Georgian society is also interested in quality of comparability of statistical methods and techniques with internationally recognized standards and approaches. Hence, we need to think about ways how to explain satisfactorily the features of statistical business processes.
We believe that the best way to explain a subject is to write a book about it. The illustrative example of this is recently published handbook *International Statistics*. Basic concepts and structure of international statistics provided in this book are designed to familiarize economists, policymakers, market participants, and students with internationally accepted ways to produce and utilize statistical data. It helps users to better understand how statisticians around the world produce statistical information and introduce the main concepts and methodological approaches used by statisticians and economists to measure economic phenomena and compare main economic indicators country by country. The Handbook covers a wide range of themes. First of all, it describes why the international statistics are needed and how they are harmonized with national statistical systems. Then the Handbook elaborates all four macroeconomic statistical systems: National Accounts, Balance of Payments, Monetary and Financial Statistics, and Government Finance Statistics and highlights the interrelationships between them to assist the reader in understanding the main concepts underlying these statistics. The *Handbook* also takes into account new developments in international standards for statistics.
Lack of knowledge of the terminology used by professional statisticians is one of the main obstacles for clearly understanding statistical data. For example, if the ordinary user does not know specific terms used by professionals, the way to overcome this is to look it up in thesauruses. That is why, the above-mentioned *Handbook* contains a short glossary of statistical terms, including key words in English to overcome language problems.
It is noteworthy that the *Handbook* on International Statistics is the first attempt in Georgia to provide users with appropriate skills and tools for correct interpretation of statistical data. Moreover, it gives readers various sources of information to gain more in-depth understanding of the international concepts and frameworks in statistics.
During last two years we were focused also on the media and statistical education for journalists. The project "Enhancing Journalists' Skills in Economics and Finance" was designed to build capability among journalists reporting on financial and economic data by developing their understanding and skills. The project comprised a six-month training program amounting to seventy-hours of in-class seminars led by top Georgian experts and practitioners in the fields of economics and statistics. It was intended to respond to a growing demand for journalists with knowledge in economics and finance to correctly interpret and present statistical information and its implications for society.

II. Plans for coming 2013

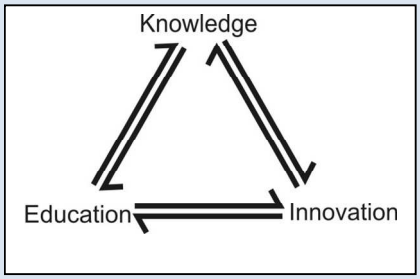
In the Year of Statistics 2013 we are going to organize a special series of publications "*Let's talk about Statistics*" in the local scholarly journal, and also write a book "*Let's talk about Statistics: A Popular Guideline for you*". They'll contain a lot of useful stories about statistics, its benefits, challenges and prospects in the face of rapidly changing economic environment. Both of those publications will be intended for students, academics, media, and broad society.
On the other hand, our cooperation with data reporters is always focused on statistical knowledge and methods transfer and popularization of statistical education. 2013 will be remarkable also for monetary and financial statistics development in Georgia because we are going to launch a completely new innovative Statistical Information System, called *SebStat*, which will be intended for collection, processing and dissemination of statistical data on financial sector institutions activities. We believe that *SebStat* is a great step forward for Georgian Statistical System and we are very proud of this achievement.

How is Eurostat promoting statistical literacy?

Towards a European Master in Official Statistics (EMOS)

Walter Radermacher, Chief Statistician of the European Union

Producing reliable statistics as a base for decision-making is the core business of the National Statistical Institutes (NSIs). At the same time the NSIs are well aware that in order to generate knowledge, it is also necessary that data users are able to draw the right conclusions from the data and that each data user has a sufficient level of *statistical literacy*.



Inside the European Statistical System (ESS)[1], the idea of a *European Master in Official Statistics (EMOS)* was launched for the first time in 2008. The possibility of creating a training capacity was explicitly mentioned in the Communication[1] to the European Parliament and Council "on the production methods of EU statistics, a vision for the next decade" which the Commission adopted in August 2009

So the idea grew to build partnerships between European Academic Institutions and NSIs in the implementation of the knowledge triangle (see box) and to create EMOS, a joint project of different stakeholders (NSIs, Eurostat, Universities and national schools in statistics) with the aim of reaching a higher level of knowledge in various ways:

1. statistical producers could benefit from well-qualified researchers in official statistics;
2. other organisations with a link to statistics (ministries, central banks, research, consulters etc.) could acquire better qualified staff in statistics on the labour market;
3. NSIs and universities stand to learn a great deal from each other through having this project in common. In the long term, NSI experts could participate directly in drawing up the curriculum of EMOS and the different courses could be part of the advanced vocational training programmes.

In spring 2012, Eurostat launched a Call for Tender for the *feasibility study* 'Towards a European Master in Official Statistics' aiming to contribute to the creation of such a European Master and to set up a network of programmes dealing with Masters in Official Statistics at European level. The feasibility study started in autumn 2012 and will submit a final technical report in autumn 2013.

Assuming that the universities and relevant stakeholders remain interested and the systems of education across Europe are not too different, it is expected that the first courses of EMOS will start in the winter semester of 2014. Consequently it now seems possible to have the first young researchers with a *Degree in a 'European Master in Official Statistics'* by summer 2016.

[1] Eurostat and the national statistical authorities in the 27 Member States and in the EEA and EFTA countries.

[2] COM(2009)404 final

Statistics New Zealand and Statistical Literacy

By Andrew Tideswell, Subject Matter Project Manager,
Statistical Education
Statistics New Zealand

Introduction

The purpose of this paper is to comment on Statistics New Zealand's initiatives in relation to statistical literacy.The main topics discussed include:

1. Definitions of statistical literacy.
2. What benefits arise from improving statistical literacy?
3. What role does Statistics New Zealand have in relation to improving statistics literacy?
4. What challenges exist in relation to increasing the amount of statistical literacy?
5. How has Statistics New Zealand committed to addressing statistical literacy?

a. How are the needs of audience groups for official statistics prioritised?
b. What initiatives in statistical literacy does Statistics New Zealand support?

6. Conclusion

1.Definitions of statistical literacy.

Being statistically literate involves responding appropriately to the statistical impulse in order to solve problems or improve situations in the world. The statistical impulse is a desire to base decisions on deliberately collected data and therefore a recognition and acknowledgement that decision making based on anecdotal evidence and personal experience or "common sense" is unsatisfactory.[1]

One model for statistical thinking adopted in New Zealand statistical education includes the Problem, Plan, Data, Analysis, Conclusion (PPDAC) cycle. This model is about solving "real world" problems. Being statistically literate means engaging in or having an appreciation or understanding of this cycle or its equivalent at some level. Even if one is not a statistician, a statistically literate citizen is one who has some ability to think critically about descriptions, policies, actions and options, which have been or should be based on data.

Statistical literacy involves the understanding of the nature of data and statistics in their many dimensions and representations and a critical understanding of processes that have been applied to them. It also involves reflection on how and where statistics have been used in supporting decisions in general, publicity, arguments and policy as well as the extent to which those applications of statistics are valid.

2.What benefits arise from improving statistical literacy?

(But democratic) governments want to make good decisions and at the base of good decision making should be the use of high quality information and evidence, both in developing new policies and evaluating current policies.[1]

On a daily basis we see there is no shortage of interest in statistical information, whether it is in examining the performance of our institutions or in advocating for social programmes or general investment by individuals, business, agencies and the government. Some argue that a prerequisite of being a fully integrated citizen is to be able to think statistically to form one's own opinion without too much external influence.[1] Others imply that appropriate use and understanding of statistics in public fora support healthy democracy.

Official statistics provide evidence and data to inform decision-making from government, to businesses, and to households. Sectors as diverse as medicine and mining rely on data for decision making.

3. What role does Statistics New Zealand have in relation to improving statistical literacy?

In 2012 , being the 20th anniversary of the Fundamental Principles of Official Statistics, Statistics New Zealand reported to the United Nations Friends of the Chair Group of the United Nations Statistical Commission on its implementation of those principles. In that report we acknowledged our role in educating users of official statistics, including the media, by reporting on specific instances where we execute that role.

The New Zealand official statistics system is a distributed model, with fourteen other state agencies also involved in the production of official statistics. Under our 1975 Statistics Act, we are mandated with leading the official statistics system. This motivates Statistics New Zealand to address the statistical literacy needs of our own staff and official statistics partners. The role of addressing the statistical literacy needs of a more widespread audience by increasing their capability derives from our second strategic priority of obtaining more value from official statistics.

4. What challenges exist for Statistics New Zealand in relation to increasing the amount of statistical literacy?

New Zealand employers often report they struggle to recruit new employees with appropriate skill and knowledge, including in literacy and numeracy. A response has been for some industries such as trades to incorporate those skills in their apprenticeship or other training programmes. Coalitions of organisations, such as The New Zealand Network for Financial Literacy, are addressing numeracy needs in the compulsory and adult education sectors.

Whereas New Zealand as a whole fares comparatively well in numeracy and literacy, a tail of poverty-related underachievement has been identified in education, which is a risk

both to the supply of future skilled statisticians and to the ability of future generations to make best use of official and other statistics.

Maori, the indigenous people comprising about 14% of New Zealanders, have been identified as over represented in that tail and Statistics New Zealand has responded accordingly in our prioritisation of Maori, as is outlined later. This prioritisation results in part from Statistics New Zealand recognising that Maori groups want to increase their use of official statistics and may want to develop as producers in the field in order to improve governance at tribal (iwi) level.

Balanced against that, New Zealand rates highly or very highly on international comparison studies of numeracy, literacy and other areas which call on those skills and knowledge such as science, in the compulsory education sector. Examples include the 2009 Programme for International Student Assessment (PISA) where New Zealand high school students ranked 13th out of 65 participating nations in mathematical literacy, 7th in Reading Literacy and 4th in science.

One problem is, however, that as in many countries the structure of the education system can lead to graduates matriculating in either numeracy-based or literacy-based disciplines, but very few with the combination of both sets of skills. [1] It is the combination of both that is required for the provision of sound policy advice or analysis of existing policy and practice, based on the use of official statistics.

A challenge for Statistics New Zealand is to facilitate the development of graduates and a workforce with a more balanced and joined up skill set, as leader of the nation's official statistics system, and in cooperation with its partners in that system.

At the same time we must meet the challenge of informing and influencing our partners in the education and training sectors who are charged with developing future generations of New Zealanders.

5. How has Statistics New Zealand committed to addressing statistical literacy?

Statistics New Zealand has committed to addressing statistical literacy by identifying audience groups whether they are users of official statistics, producers or both, and by prioritising their statistical literacy needs.

We have committed to developing statistical literacy in each group through a systems approach. This allows us to target our engagement with each group appropriately, whether it be through direct provision of training and education, or through influencing and persuading.

a . How are the needs of audience groups for developing literacy in official statistics prioritised?

Statistics New Zealand's strategic priorities for leading the official statistics system, and for obtaining more value from official statistics have resulted in the maintenance and development of the statistical capability of its own staff as being at the forefront, along with the needs of its official statistics partner organisations – other producers of official statistics.

A recently commissioned analysis of the likely statistical education and training needs within New Zealand has identified central and local government agencies, groups leading the indigenous Maori population, and media as priority groups for capability building.

b.What initiatives in statistical literacy does Statistics New Zealand support?

In 2006 Statistics New Zealand a General Manager for Statistical Education, which in 2007 evolved to become a joint General Manager/Professor position. This role is to raise the statistical capability of the official statistics system, including through promoting official statistics as a sub discipline within statistics, and by raising the skills in official statistics of students graduating in those courses which lead to employment in the state sector.

Statistics New Zealand adopts a "systems" approach to building statistical literacy. Our activities fall into three broad areas including:

i.Working with key leadership organisations in the education system

The statistics section of the New Zealand school curriculum is comparatively large and advanced[1]. In the national high school assessment system, statistical literacy is identified as 'a key component of responding appropriately to the statistical claims around us' and Year 11students are expected to 'use a range of appropriate concepts and terms to demonstrate an understanding of statistical literacy'.

As part of a strategic approach to increasing the statistical literacy of the general population, Statistics New Zealand's Statistics Education team interacts with the New Zealand Statistics Association (NZSA) education subcommittee, and in an influencing role with the New Zealand Ministry of Education (MOE) and the New Zealand Qualifications Authority on matters of curriculum, standards and assessment. In association with the MOE, we lead and co-fund CensusAtSchool which coincides with the years of the national census, and in which students co-construct a national data base which can be used in a variety of empirical enquiries based on the Problem, Plan, Data, Analysis, Conclusion (PPDAC) investigative cycle[1].

ii.Forming new strategic alliances for the promotion of adult statistical literacy

The General Manager of the Statistical Education team has a dual role as half-time Professor of Official Statistics located within the School of Government in the Victoria University of Wellington. This role includes developing relationships within and across universities and state sector agencies

One initiative has been the establishment of the Network of Academics in Official Statistics (NAOS) as a step in forming constructive and coordinated activity in research in and teaching of official statistics across the tertiary sector.

In responding to requests from universities and schools for access to official statistics for teaching, including the use of micro data, Statistics New Zealand has produced Confidentialised Unit Record Files (CURFs) and fully Synthetic Unit Record Files

(SURFs). Thought is currently being given to the extent to which the risks to confidentiality arising from demand for access to micro data will in future be met by improved techniques in confidentialising, or by the production of SURFs, or some combination of these.

The Certificate of Official Statistics is an initiative that brings together Skills Organisation, the state training organisation which administers the certificate, together with education providers such as Victoria University to deliver a certificate which is owned by Statistics New Zealand and was developed by Statistics New Zealand in association with the State Services Commission (an agent responsible for cross department state sector issues). This certificate, commencing as a pilot in 2007, now attracts a cohort from within Statistics New Zealand, but primarily partner organisations in the official statistics system, central and local government agencies and non-governmental organisations. Candidates develop the ability to interpret and use statistics, assess sample design and evaluate inferences within the context of New Zealand ethical and legal guidelines for the production and use of official statistics. An alliance of academics in official statistics from a number of New Zealand universities collaborate to deliver the modules making up the certificate.

A similar alliance involving Statistics New Zealand and five universities nation-wide resulted in an Honours Paper in Official Statistics, offered on each campus, aimed at developing students who have a university background in statistics, but who lack knowledge specific to official statistics. Covering topics including: demography, data matching, data visualisation, survey design, the use of a range of social statistics, macroeconomic statistics, administrative and survey data, and locating this within a set of statistical principles and legal and ethical frameworks, this paper was joint winner of the 2011 International Statistical Institute ISI International Statistical Literacy Project 'Best Cooperative Award'.

Our Outreach team supports individuals and community and business groups in their use of data to evaluate and make decisions. The "Go Stats!" programme raised the awareness of the business community of the range of products and services, including data and on line tools available to help them in planning their business models and activities.

The media has been identified as a priority audience for developing statistical literacy levels and in 2007 help was provided to the New Zealand Journalism Training Organisation (JTO) to develop a statistics unit aimed at improving journalists' use of data in reporting. This unit is now compulsory for the Level 5 course and preliminary discussion has occurred regarding the development of an advanced unit.

In related area, our Outreach team provides support to external agencies and individuals seeking to make use of our data and online tools.

Statistical Education team, working with our Maori Advisory unit which leads engagement with Maori, aims to further define needs of Maori as users of official statistics and as potential producers, to engage Maori in taking up opportunities to develop statistical literacy and to work with Maori educational institutions (such as wananga) to facilitate training and education in official statistics.

Influencing other government agencies to take action to build statistical literacy in their own sphere of responsibility.

Through promoting the Certificate of Official Statistics with other government agencies, Statistics New Zealand encourages those organisations to build their own statistical literacy. Two series of presentations offer further support.

The Official Statistics Seminars is a series of presentations offered free of charge and promoted through public service networks. Covering topics as diverse as the measurement and effects of child poverty, to micro simulations using geospatial techniques, these seminars are offered by our staff and visiting national and international statisticians. They are heavily subscribed and by eliciting suggestions for topics from our audience base we aim to engage other government agencies in co-constructing a curriculum which addresses their statistical literacy needs.

The Statistical Education Team has commenced a stocktake of internal training and seminar activity, with the aim of encouraging their being offered to external audiences, where appropriate.

A separate Official Statistics System Training Series aims to provide intermediate level training for the state sector on a cost recovery basis. A typical training event would be a one or two day workshop.

Conclusion

Statistics New Zealand recognises that a robust official statistics system is required in order for New Zealand to reach government and societal goals. Policy and practice should be based on evidence where possible.

Information has limited value unless it is shared and acted on; having the statistical literacy to appreciate and use statistical information is a competency which needs to be shared not just within the partner organisations but in the wider public audience in order to maintain an effective society.

In order to achieve those ends, Statistics New Zealand has recognised that although it is not an educational agency, it can influence and lead partner producer organisations with a shared goal of ensuring the health of the system. At the same time, we influence and support the institutions and groups that contribute to the supply of statistically literate citizens.

[1] See Wild, C., and Pfankuch, M., in Statistical Thinking in Empirical Enquiry, in the International Statistical Review (1999), International Statistical Institute.
[2] Gluckman, Sir Peter, Chief Science Advisor to the New Zealand Prime Minister in 'Towards better use of evidence in policy formation: a discussion paper', Office of the Prime Minister's Science Advisory Committee, April 2011.
[3] Ascari, Barbara and Mortati, Francesco, in ISTAT'S NEW STRATEGIES TO INCREASE STATISTICAL LITERACY, – Istituto Nazionale di Statistica, Italy, 2011
[4] Forbes, S., Bucknall, P., and Pihama, N., in Helping Make Government Policy Analysts Statistically Literate.
[5] Barton, B., Clark, C., and Sheryn, L., in 'Collective Dreaming: A School-University Interface, The New Zealand Mathematics Magazine (2011), 48, 1, 1-22.
[6] Adapted by Pfankuch, M. and Wild, C., (1998). Statistical Thinking and statistical practice: Themes gleaned from professional statisticians (unpublished manuscript), cited in Wild, C. J. and Pfankuch, M. in Statistical Thinking in Empirical Enquiry, in the International Statistical Review (1999), 67, 3, 223-265.