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READI NEWSLETTER

Risk Management, Economic Sustainability and Actuarial Science Development in Indonesia

TO ESTABLISH INDONESIA AS A REGIONAL CENTRE OF ACTUARIAL EXCELLENCE

The READI (Risk Management, Economic Sustainability and Actuarial Science Development in Indonesia) Project aims to increase the number and quality of Indonesian actuarial science graduates to address the country's growing demand for actuaries. In collaboration with the Government of Indonesia, the insurance industry, key university partners, and the Society of Actuaries Indonesia, the READI project aims to develop Indonesia as a regional centre of actuarial science excellence. Project efforts will supplement the Otoritas Jasa Keuangan (OJK)'s 1,000 Actuaries program by providing gender-equitable opportunities and support for innovative, high-quality actuarial science education, certification and professional development

Math Outreach and Public Education on Actuarial Science

READI's Math Outreach Team traveled to Jakarta, Bandung, Cirebon, Semarang, Surabaya, Medan, Denpasar, and Manado to deliver outreach talks and events promoting actuarial science to increase awareness of the actuarial profession to selected target groups including high school and university students, teachers, and parents.

School visits were held at 11 high schools in Jakarta, Bandung, Semarang, and Bali to demonstrate that mathematics is fun, relevant, and leads to exciting careers. These events were designed to increase mathematics problem solving skills, as well as provide information about the best career opportunities in

mathematics, especially the actuarial profession. Students were actively involved in mathematics games and discussions. Some high schools have mathematics clubs and the students expressed great interest in actuarial science.

In response to the increasing demand for school visits, READI invited lecturers from partner universities to join the Math Outreach Team. As a result, in September 2017, READI and University of Waterloo's Center for Education in Mathematics and Computing (CEMC) provided Math Outreach training to mathematics lecturers from Universitas Gajah Mada, Universitas Pelita Harapan, Universitas Prasetiya Mulya, Universitas Parahyangan, Institut Pertanian Bogor, and Institut Teknologi Bandung.

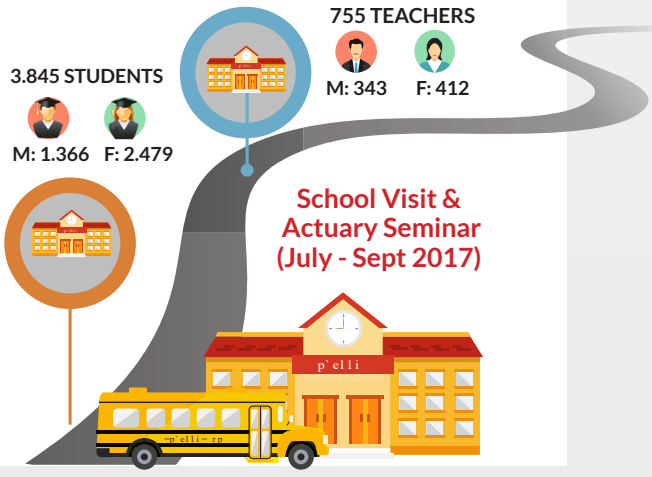
To further expand public awareness on actuarial science, READI collaborated with the following associations and universities in presenting seminars entitled "Aktuaris, Peluang Karir Terbesar di Bidang Matematika" in

Bandung, Cirebon and Bogor:

- Counselor Association (Musyawarah Guru Bimbingan Konseling - MGBK),
- West Java Teacher Association (Musyawarah Guru Mata Pelajaran – MGMP Jawa Barat),
- Institut Teknologi Bandung,
- Universitas Parahyangan,
- Universitas Pelita Harapan,
- Universitas Prasetiya Mulya,
- Universitas Gajah Mada, and
- Institut Pertanian Bogor,

These events brought together 2.602 students and 719 teachers from several public and private high schools in West Java. Participants were introduced to actuarial science as a profession and opportunities in Indonesia for employment in the field through discussions with professional actuaries and lecturers from universities from actuarial science study programs.

READI also participated in the World Education Exhibition 2017 in Jakarta, Medan, Surabaya, and Denpasar Bali from 14 – 19 September 2017, where Actuarial Science Seminars were conducted with resource persons from Universitas Pelita Harapan, Universitas Parahyangan, Universitas Indonesia, Institut Pertanian Bogor, and Institut Sepuluh November Surabaya. The visitors, mostly students, were very interested in the seminar sessions as we presented the scholarship program for actuarial science study in selected well-known universities. At the exhibition booth, the visitors were also actively involved in the math corner and actuary corner to get more information about actuarial science.



Co-operative Education and Work Integrated Learning

Co-operative education is a structured method of combining classroom-based education with practical work experience. It alternates a study term with a work term, involves a partnership between the academic institution and the employer, and compensates the co-op program student for their work while advancing the education of the student.

Cooperative Education is a talent pipeline for both universities and employers and has many advantages over traditional university programs. This model is, however, still new in Indonesia and will take some time to introduce. It will also need to be synchronized with the Indonesian education curriculum. Further efforts will therefore be needed, particularly in the area of regulation and curriculum development, while continuing to educate employers as to the advantages of Co-op programs and their long term sustainability.

As part of the technical assistance in support of the development of the Co-operative Education program, a series of training sessions on the Fundamentals of Co-operative Education have been delivered to university partners. The objective of the training was to build the capacity of selected university partners to pilot co-operative education programs (a.ka. "work integrated learning" program) which integrated with the academic curriculum of actuarial science program study.

In July 2017, READI initiated a Co-op study visit to the University of Waterloo, Canada. Nine people, including those from partner universities (Universitas Pelita Harapan and Universitas Prasetiya Mulya), insurance companies (Manulife and Sunlife), government agencies (Kemenristek Dikti and OJK) and the Indonesian Actuarial Association (PAI) participated in the study visit.

The study visit was focused on learning from the experiences of University of Waterloo and its industry partners in structuring, developing and implementing co-operative education and work integrated learning programs. During the study visit, participants were provided with opportunities to hear about best practices in Co-operative Education from the Co-operative Education and Career Action Centre, (CEMC), Willis Tower Watson Company, Munich Reinsurance Company and Fairfax Financial Toronto. The study visit proved to be an excellent opportunity to promote the value of co-operative education and encourage the universities and industries to actively participate in the development of a co-operative education model suitable for Indonesia. Overall the study visit participants felt that the tangible benefits of Co-op programs (e.g., work skills, attitudes, values, personal and interpersonal relationship, future outlook) would work well in supporting students to become professional actuaries in Indonesia.

Since several university and industry partners have been interested in developing a Co-operative Education program, READI felt the need to have some agreement regarding the minimum standards required

to ensure quality, professionalism and consistency of the Co-operative Education program. To this end, READI conducted a 1-day Workshop "Langkah Maju Menuju Model Pendidikan Terpadu" in Jakarta on September 26, 2017 which brought together participants from university and industry partners as well as related government officials from the Ministry of Finance, OJK, Ministry of Research, Technology, and Higher Education. The purpose of the workshop was to discuss a suitable definition for co-operative education and construct minimum standards/ requirements that would be suitable within the Indonesian context.

Participants of the Workshop agreed that the term "Co-operative Academic Education Program" (Program Belajar Kerja Terpadu) would be most suitable for Indonesia. Responding to the concerns from universities in terms of accreditation, particants agreed that universities should not be penalized if they are running co-operative programs which may lead to longer study times. Professional actuarial education can be categorized as level 7, the same level as medical education and thus, theoretically, could/should have a longer study program approved.

Industry, university and government must work together to support implementation of co-operative education, particularly as it relates to defining the best periods for students to work in industries/companies and matches with industry's business cycles, time and industry needs. Most importantly, to achieve the full support of the Ministry of Higher Educations, there is a need to create a Government regulation related to Co-operative Education, and in particular Actuarial Science programs, to provide a basic foundation and legal umbrella. Such a regulation would allow industry and universities to work in harmony to develop and support Co-operative Education program implementation in the field. READI will work with partner universities, industry partners, OJK, PAI and P2PK to support this process.

As follow up, a comprehensive report will be submitted to Ministry of Research, Technology, and Higher Education summarizing:

- the shortage of and demand for actuaries in Indonesia;
- current and proposed actuarial science study programs and streams of study;
- READI project activities including Co-operative Education program development;
- the benefits that Co-operative Education programs offer to students, universities and industry; and
- the challenges to be addressed (legal, curriculum-related, human resources at universities).

The Industry-University Task Force (IUTF) Co-operative Education Working Group will lead the process of drafting an Academic Paper as a basis for working with the Ministry of Research, Technology, and Higher Education to draft a regulation to provide a legal umbrella for universities to offer Co-operative Education programs.



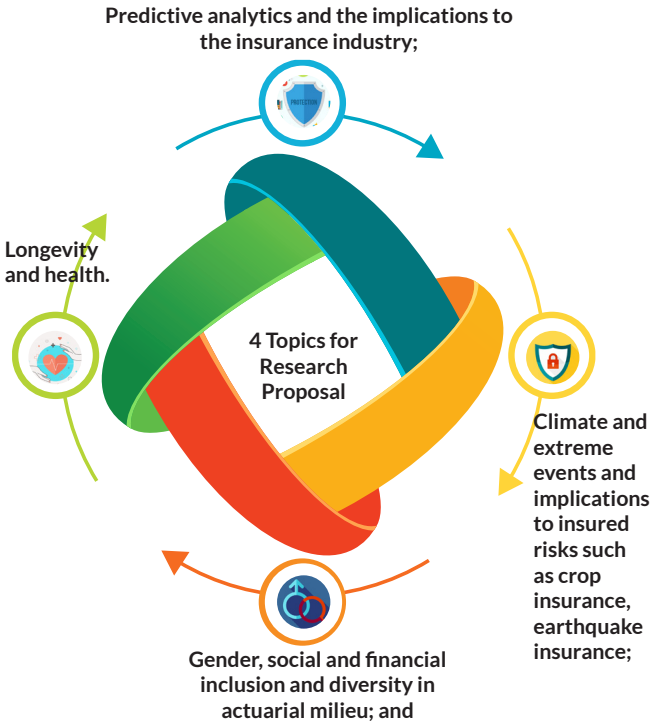

SCHOLARSHIP PROGRAM

READI Project provides scholarships for actuarial science students studying with university partners. Scholarships will be awarded to first to fourth year students. Scholarship funding includes tuition fees, living expenses, learning support costs, and actuarial examination fees from the Society of Actuaries Indonesia.

The Letters of Agreement (LoA) to formalize cooperation on the READI Undergraduate Scholarship Program have been signed between READI and university partners. As of September 2017, READI had received 166 scholarship applicants from 8 universities.

Actuarial Science Applied Research Fund

The READI Project has launched the Actuarial Science Applied Research Fund. It will support development of the actuarial profession in Indonesia while encouraging public understanding of the profession through targeted research and publications. The Research will also serve to fill knowledge gaps, such as in the key areas of longevity, mortality, gender equality, and various risks associated with climate change. Lecturers and university students, actuarial professionals, researchers and professionals involved in insurance and risk management, modeling or addressing risks associated with climate change and/or gender and social inclusion issues, are encouraged to apply.



Proposals that include actuarial science applied research that explicitly incorporate or address gender and social inclusion issues – such as micro insurance for vulnerable populations, small business or personal insurance for women or socially disadvantaged entrepreneurs, and disability insurance – are also strongly encouraged. Adjudication and awarding of research funding may also be followed by support for: presentation of research findings at workshops; assistance with publication preparation and broad dissemination of results in multiple formats and media to enhance accessibility.

Development of Actuarial Science Lecturers

To strengthen the capacity of actuarial science and risk management teaching professionals in Indonesia, mentoring is provided through short courses, e-courses and workshops. Two short courses – Actuarial Mathematics I and II – were held in January and May 2017, delivered by Professor David Landriault from University of Waterloo and attended by lecturers from university partners and government officials (Ministry of Finance and OJK). In July 2017, participants had an opportunity to write a PAI approved exam prepared by Prof. David Landriault which also serves as a Post Short Course Assessment for Actuarial Mathematics I and II. The assessment was a 2.5 hour closed-book exam with 20 multiple-choice type questions. From 19 participants (8 females, 11 males) eight people scored at least 70%, the requirement for being accredited by PAI.

In addition, the short course, Actuarial Mathematics III, was held at Universitas Prasetiya Mulya, from July 24 to 28, 2017. The short course, delivered by Professor Johnny Li, FSA, PhD from University of Waterloo, was focused on multiple

decrement models and multiple life models. Thirty-two participants (14 female and 18 male) from 8 universities (ITB, IPB, UGM, UI, ITS, UPH, UPM and UNPAR), Ministry of Finance, and OJK attended the course and provided positive feedback.

Most short course participants have no actuarial science background. They are lecturers in mathematics and statistics working to be prepared to teach the actuarial study program at their respective universities. Participants found the courses to be beneficial in strengthening their knowledge on actuarial science and their teaching abilities. One of the participants

stated that after attending the short courses she became more confident in teaching life insurance in the following semester.

Gender Equality in the Actuarial Milieu

The READI Project mandates a gender mainstreaming approach, a strategy that allows for integrating the concerns and interests of women and men in the design, implementation, monitoring and evaluation of policies and programs. READI Project's gender equality strategy is intended to promote gender equality where women and men are treated equaly, have aqual access to resources and benefits and are able to realize their full potential and contributions as citizens. From several discussions with university lecturers, students, and IUTF members it appears that participants in the discussion already have a good understanding of the roles, challenges and contributions of men and women in the family, at work, and in society.

Project data and observations indicate that a large number of girls and women enroll in mathematics and actuarial mathematics programs – in many instances comprising a majority. Female actuarial science students and accredited actuaries likewise tend to excel in their field. Preliminary data and observations, however, which are currently being verified through the project's baseline data collection efforts, indicate that once women enter the actuarial science

profession they are less likely than men to assume senior and leadership roles.

As follow up, READI Project will conduct a survey on the working environment in the insurance industry. The survey's objective is to find out more about challenges and career prospects affecting women and men who work in the insurance sector. The results from this survey will help READI Project to work with the PAI and insurance company partners in Indonesia to promote training programs and Human Resource policies and innovations to further optimize the effectiveness and success of male and female actuaries working in the sector.

PHOTO GALERY

1. Actuary Seminar "Aktuaris, Peluang Karir Terbesar di Bidang Matematika"

2. World Education Exhibition 2017, Jakarta, Medan, Surabaya, Bali.

3. Co-operative Education Study Visit to University of Waterloo

UPCOMING EVENTS (October December)

- Workshop READI-AAUI on Role of Actuaries in General Insurance.
- Short term visiting initiative to University of Waterloo.
- Actuarial Science Seminar in Bandung with Universitas Parahyangan.
- School Visits in Jakarta, West Java, and Jogjakarta.
- Training on Fundamentals of Co-operative Education at Institut Teknologi Bandung and Universitas Parahyangan
- Training on Fundamentals of Co-operative Education for Industry.
- Gender Equality Survey regarding Working Environment in Insurance Company.
- 4th Industry – University Task Force Meeting.