

REPORT ON THE AMUCWMA/AWMA WORKSHOP HELD AT NAIVASHA (KENYA), 16TH TO 18TH JULY 2015

Background Information

The workshop of African Women Mathematicians held during the period 16th -18th July 2015, at Lake Naivasha Panorama Park, Naivasha, Kenya. The theme of the workshop was “Women in Mathematics for Social Change and Sustainable Livelihoods”.

This workshop was a follow-up one of a series workshops jointly organized by AMUCWMA (African Mathematical Union Commission on Women in Mathematics in Africa) and CIMPA. The first one was held in Ouagadougou (Burkina Faso), 26th –27th October 2012, and the second one was held at the African Institute of Mathematical Sciences (AIMS), Cape Town, 17th – 19th of July 2013.

The main objectives of this workshop was to bring together women from various countries within the continent to a platform where they can present their work, exchange experiences and discuss initiatives that promote Mathematics with the aim of addressing social change and creating sustainable livelihoods. There was also plenary sessions from invited speakers representing various African regions as well as experts from elsewhere to address and facilitate specific themes of the workshop.

More precisely, the event had four main components:

- scientific lectures by renowned mathematicians in their area of research
- lectures on women mathematicians situation in Africa
- Scientific presentations of the work of some participants
- the first General Assembly of AWMA since its establishment in 2013.

The workshop also aimed to bring together African women mathematicians from the continent to advance the association's agenda, of promoting mathematics and women mathematicians in Africa. The workshop gives young women in science and mathematics the opportunity to meet role models other professional women who have successfully pursued scientific and mathematically-oriented careers. It was intended for;

- African women mathematicians
- Doctoral students;
- Faculty members ;
- All those who are interested in mathematics.

Conference Proceedings

A number of guest lectures were identified and invited by the organizing committee.

The International organizing committee comprised of the following members:

- Marie-Francoise Ouedraogo (Chairperson of AMUCMWA and AWMA, Burkina Faso, West Africa)
- Sibusiso Moyo (Secretary of AMUCMWA and Vice-president AWMA, Southern Africa)
- Marie-Francoise Roy (Chair of IMU CWM, France)
- Josephine Guidy-Wandja (Vice-president AWMA, western Africa)
- Rebecca Walo (Vice-president AWMA, Central Africa)
- Yirgalem Tsegaye (Vice-president AWMA, Eastern Africa)
- Schehrazad Selmane (Vice-president, Northern Africa)
- Senelani Dorothy Hove-Musekwa (Secretary AWMA, Southern Africa)
- Fagueye Ndiaye (Treasurer AWMA)

The Local Organising committee consisted of

- Josephine Wairimu Kagunda (University of Nairobi, Chair, LOC)
- Winnie Nduku Mutuku (Kenyatta University, Vice-secretary AWMA)
- Beth Kiratu (Technical University of Kenya, Secretary, LOC)
- Margaret Gathogo (Masai Mara University, Treasurer, LOC)
- Marilyn Rono (University of Nairobi, Member, LOC)

The workshop attracted 43 participants from at least 17 African Countries within the continent: Algeria [1], Burkina Faso [1], Cameroon [2], Cote D'Ivoire [3], DRC Congo [1], France [2], Gabon [1], Ghana [1], Kenya [11], Morocco [3], Nigeria [5], Senegal [3], South Africa [5], Tanzania [1], Uganda [1], Tunisia [1], Zimbabwe [1].

The programme was as follows:

Day 1: Thursday 16th July 2015

The programme started with the opening ceremony. Winnie Mutuku who directed the ceremony recalled the story of this series of workshops, the two past ones, from Ouagadougou and Cape Town and also the creation of AWMA. She also talked about the number of participants who attended the workshop and the number of countries represented. She was followed by the LOC chair Josephine Wairimu welcomed all participants and gave practical information to participants. In her speech, Marie Françoise Ouedraogo, chair of AMUCMWA and AWMA recalled the collaboration between CIMPA and AMUCMWA for the organisation of activities promoting African women mathematicians.

She also talked about the objectives and the various aspects of the programme of the workshop. Marie-Francoise Roy, recalled the steps which lead to this collaboration with CIMPA and the involvement of CIMPA in all activities promoting mathematics and African women mathematicians in Africa. She also said a few words about the new International Mathematical Union Committee for Women in Mathematics that she is chairing.

The opening ceremony continued with the speech of Prof. Weke, Director of the School of Mathematics of the University of Nairobi. In his speech, he welcomed all participants in his country, Kenya. He presented in some slides the University of Nairobi, the school of Mathematics by its different departments, the different training courses available, the different programmes as well as the number of students.

The opening ceremony ended with the vote of thanks by Beth Kiratu.

The first presentation of the workshop was due to Prof. Livingstone Luboobi, from the Makerere University. The title of his talk was "Current and Future Trends of Bio-mathematics". He insisted on the importance for the models to be well adapted to the data. This presentation was followed by Schehrazad Selmane, from University of sciences and technology Houari Boumedienne on the theme: "Mathematical Modelling and Applications". She gave relevant examples related to concrete situations in Algeria. Saima Khenissy from Institut Supérieur d'Informatique, Université de Tunis El Manar, and chair of the Tunisian women on Mathematics Association talked on: "Biharmonic Equations", insisting on the importance of geometric properties of the domain. Sophie Dabo from University of Lille talked on "Nonparametric modeling of spatial data: application to biomedical data" and described the results obtained in a project funded by the French North region. Most of these presentations focused on applied mathematics and statistics and gave various mathematics models for the resolution of concrete problems, particularly public health policies.

These talks were then followed by contributions of Sinobia Kenny from AIMS South Africa on "Improving the quality of teaching and learning Mathematics in disadvantaged schools" and Mmabatho Mokiti from Mathemania South Africa, on "Empowering girls through Mathematics".

The day ended with the discussion forum. During this forum, after a period devoted to a lively presentation of participants to the whole group by pairs, different subjects were discussed in order to prepare the General Assembly of AWMA. At the end of the discussion, the following points were set up for the agenda of the General Assembly:

- the report of activities 2013/2015 of AWMA to be approved
- the logo of AWMA to be adopted
- the website of AWMA to be approved
- how to encourage members of AWMA to pay their fees
- the bank account to be opened in a given country of Africa
- the list of coordinators per country to be discussed
- the project of portraits of role models to be approved

- the location of the next meeting of AWMA in 2017.

Day 2: Friday 17th July 2015

The day began with the talk of Tony Ezome, from Université des Sciences et Techniques de Masuku, Gabon on the theme “Mathematical aspects of cryptology”. Illustrated by simple arithmetic examples, the talk featured an introduction to various aspects of modern cryptology. This talk was followed by several contributions focusing on the situation of women mathematicians in Africa. The talk of Prof. Adewale Solarin, President of the African Mathematical Union (AMU) was “AMU programmes for promoting mathematics among African Girls and women”. Prof. Nouzha El Yacoubi, AMU Vice-president presented on “Involvement of women in STEM for development in Africa”. Prof Josephine Guidy-Wandja, AWMA Vice-president proposed a talk on “Mathematical role models in Africa”. These different talks gave a lot of information on the situation of women and also on some ressources and programmes developed to promote women mathematicians as well as role models in mathematics and to encourage young girls to pursuit studies in mathematics.

In the afternoon, Salimata Gueye Diagne continued the series about the women's situation with her talk “Increasing acces of girls and women in higher education”. After that, Lucy Muthoni from Kenya gave a contribution on “Kenya's developpement plans: how can mathematics participate?” and Deborah Olufunmiayo Makinde from University of Ibadan talked “on Teaching Permutation and Combination Using Play-way Method “.

The General Assembly took place after these talks . The aims of this first General Assembly were multiple : mainly adopt the report of activities of the period 2013/2015, adopt the logo of AWMA and approve the new website of AWMA. For these purposes, the General Assembly has been announced in the flyer of the workshop some months before and the report has been sent to members of AWMA some days before for electronic vote as stipulated in the constitution of AWMA. The report was also posted in the website. Since the General Assembly was prepared the day before by a forum discussion and the main points of the agenda identified, we focussed on the predefined topics. All the points of the agenda have been treated and since this day, AWMA has approved its reports and has officially a logo and a website (see the minutes of the General Assembly taken by the secretary of AWMA)

Day 3: Saturday 18th July 2015

As during the day before, the first part of the day focused on programs and collaboration aimed to promote mathematics and african women mathematicians. Prof. Farai Nyabadza from Stellenbosch University, South Africa, gave a talk on “AWMA-SAMSA collaboration geared towards women empowerment”. Prof. Wandera Ogana from AMMSI taked about “Promotion of Mathematics trough AMMSI and IMU-CDC” and Dr. David Malonza from Kenyatta University talked about “Gender issues and the uptake of Mathematics in Kenya”.

These talks were followed by two contributions, Fomboh-Nforba Mary form Univwrsity of Buea on “MathematicalModels for Malaria Transmission: Novel Approaches” and Aouatif AMINE

from University of Kenitra on “Cuckoo search algorithm for pedestrian tracking”. Those two talks presented other examples of mathematical modelling techniques motivated by biological situations.

The session ended with the talk of Koffi Adjoua Stanille a young PhD student from University Houphouet-Boigny (Ivory Coast) and president of the Association of Young Women in mathematics, who presented their association.

The meeting ended with the closing ceremony.

FUNDERS/SPONSORS

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- African Mathematical Union (AMU)
- International Center for Pure and Applied Mathematics (ICPAM/CIMPA)
- Committee for Developing Countries of International Mathematical Union (CDC for IMU)
- Committee for Women in Mathematics of International Mathematical Union (CWM for IMU)
- London Mathematical Society (LMS) and African Mathematics Millennium Science Initiative (AMMSI). LMS – AMMSI
- Committee for Developing Countries of European Mathematical Society (CDC for EMS)
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