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# *AFRICAN RESEARCH & DEVELOPMENT* ¶

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**National University of Rwanda,  
Directorate of Research**

**Proceedings of the Conference on the Results  
of Research Projects Funded in 2007 to 2010  
under NUR- Sida Collaboration**

**Held at Gihindamuyaga, Butare, Rwanda**

**7<sup>th</sup>-8<sup>th</sup> September 2010**



This document has been financed by the Swedish International Development Cooperation Agency, Sida. Sida does not necessarily share the views expressed in this material. Responsibility for its contents rests entirely with the author.

**ISBN 978-91-978436-4-5**

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Cataloguing-in-Publication Data National Library of Sweden

ISBN 978-91-978436-4-5

Published by: Nordic ePublisher

Stockholm, Sweden

[www.devexpgroup.com](http://www.devexpgroup.com)





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# Preface

Since 2003 the National University of Rwanda (NUR) through its Research Directorate has been funding its staff to carry out research projects with funds from the Swedish International Development Agency (Sida). Two agreement phases 2003-2006 and 2007-2010 were funded. By September 2010, the NUR-Sida program had supported 24 research projects under the Research Commission research grants scheme. As the program second agreement funding phase was coming an end in December 2010, the Directorate of Research organised this conference where by all the 24 research grantees were invited present their research projects findings where they already exist so as to take stock of achievements.

The conference was held at Gihindamuyaga, in Butare, Rwanda, from the 7<sup>th</sup> - 8<sup>th</sup> September 2010. The theme of the Conference was: **“Results of all Research Projects Funded in 2007 to 2010 under NUR-SIDA Collaboration”**. In total, 21 grantees were able to make presentations as follows: 2 in Agriculture, 5 in Arts, Media and Social Sciences, 1 in Conflict Management, 2 in Management, 1 in Law, 8 in Medicine and 2 in Basic Sciences. This book of proceedings contains the 11 extended abstracts; 10 presented works were already published in International Journals only their titles and authors are included in this book. Verdiana Grace Masanja is



the current (and first) Director of the National University of Rwanda Directorate of Research since December 2007. She also coordinates university wide Research, Consultancy, and Doctoral and Master by Research Degrees. She is a Full Professor of Mathematics and a Gender Expert. Prof. Masanja is published widely in the area of Fluid Dynamics, Mathematical Modelling (pollution, oceanography, food security and control of diseases), Mathematics education, and gender issues. In case if you wish to get in touch with us our Address is: National University of Rwanda, Butare (main) Campus, University Avenue, B.P. 117, Huye (Butare), Rwanda. *Telephone*: +250788494984

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# **Introduction**

Verdiana Grace Masanja

This book focuses on a selection of research projects with a direct application aimed to address social economic problems of Rwanda. The Research Projects have been conducted by academic staff and students of the National University of Rwanda. These are among the 75 research projects funded by the Research Directorate of the National University of Rwanda for the period 2003 - 2013 under the collaboration with the Swedish International Development Agency (Sida).

On 7<sup>th</sup> and 8<sup>th</sup> September 2010, twenty one research projects supported in the period 2007 - 2010 made presentations of their progress at a conference organised by the National University of Rwanda Research Directorate. This book contains extended abstracts of eleven research projects whose works had not been published at the time.

The topics in this book cover a range of multidisciplinary themes such as Rural Energy Options for Sustainable Development, Wind Energy Characteristic in Rwanda, Farming systems with the aim to improve productivity, and innovative methods to improve the environmental

protection through usage of indigenous tree species of Acacia tree.

Other themes that were covered are on reading culture and Rwanda traditional dances, understanding of issues that resulted in the 1994 Genocide within the National University of Rwanda with the aim to inform the ongoing transformational processes, and health related research on prevalence of respiratory diseases in Huye District and the impact of culture on the spread and prevention of HIV and AIDS in the southern part of Rwanda.

Findings from these researches have informed policy in Rwanda and all have resulted in scientific publications and International Conference presentations. Some of these research projects have been extended to theses at the level of master's and doctorate.

I take this opportunity to acknowledge profoundly the support extended to NUR by Sida in the area of research capacity building including research projects, short trainings in research methodology and academic writing, PhD training of NUR staff, establishing masters programs, supporting research infrastructure and equipments and supporting research dissemination.

I also thank the NUR executive, for ensuring the improved research environment at NUR and my colleagues in the Research Directorate, Dr. Jean Marie Ntaganda, at that time he was the Deputy Director; Mr. Cyprien Mucyo Ntaganda, the Publications Attaché, Ms Alice Dukuize, the