



International Consortium for Sugarcane Modelling

**MEMORANDUM OF UNDERSTANDING
AMONG THE FOLLOWING ORGANIZATIONS:**

**Centre de Cooperation Internationale en Recherche Agronomique pour le
Développement (CIRAD)**

Chiang Mai University (Thailand)

Commonwealth Scientific and Industrial Research Organisation (CSIRO)

South African Sugarcane Research Institute (SASRI)

Sugar Cane Growers Cooperative from Florida (SCGC)

Sugar Research Australia (SRA) Sugar Research Institute of Fiji (SRIF)

Zimbabwe Sugar Association Experiment Station (ZSAES)

October 2017

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Secretary-Treasurer - International Consortium for Sugarcane Modelling

1. INTRODUCTION

It is widely accepted that simulation models are potentially powerful tools to:

- guide and assist sugarcane agricultural research, and
- assist the planning and management of sugarcane production.

Examples are water and nutrient management, yield potential and risk assessment, crop forecasting, climate change research and genotype x environment analysis.

Currently there are several internationally established sugarcane crop models namely, APSIM sugar (Keating, et al., 1999), DSSAT-Canegro (Inman-Bamber, 1991; Singels et al., 2008. Jones and Singels, 2017), Mosicas (Martine, 2003), CASUPRO (Villegas et al., 2005) and Canesim (Singels and Paraskevopoulos, 2017). Various sugar industries and research groups have identified the need for a coordinated effort towards sugarcane modelling and expressed interest in contributing to model development and application in sugarcane research and management. An example of where this is needed is the Agricultural Model Intercomparison and Improvement Project (www.AgMIP.org, Rosenzweig et al., 2012) where global climate models and crop models are used to predict climate change impacts and to explore adaptation options, also for sugarcane.

The International Consortium for Sugarcane Modelling (ICSM) was established in May 2006 as an international partnership of research and other organizations that have an interest in sugarcane simulation modelling. Members of the ICSM ("the members") endorse its objectives and undertake to participate fully to achieve these objectives by contributing available resources and information.

2. GOAL

The ultimate goal of the ICSM is to promote the development and application of sugarcane simulation models. Key objectives are to coordinate efforts and generate resources for sugarcane modelling projects, and to promote and enable the sharing of knowledge, information and data in the field of sugarcane modelling. This will be accomplished by:

- identifying research and application opportunities;
- identifying funding opportunities for research and development;
- encouraging and soliciting proposals for collaborative research and development projects, and
- establishing a network for information sharing and discussion through the organization of meetings, workshops and training courses.

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3. TERMS AND CONDITIONS OF AGREEMENT

3.1 General

- 3.1.1 Members may freely exchange codes, programs, knowledge, data, unpublished reports and any other information related to sugarcane modelling by using any medium for communication ("material"), subject to any applicable confidentiality agreements. This entitlement terminates when membership ceases.
- 3.1.2 All material disclosed by a member is proprietary and confidential to that member and the other members shall not publish or transmit that information to any other person who is not a member, without the written consent of the disclosing member. The members must acknowledge appropriately the contributions of any other participant and/or organization and the role of ICSM in the development of any material. These obligations shall apply indefinitely.
- 3.1.3 Material to be published by any organization that undertakes research and development activities under the aegis of the ICSM must be circulated in draft form to all the other members of the ICSM at least one month prior to its submission for publication.
- 3.1.4 This agreement shall commence on 1 November 2017 and be effective for a period of five years after which it shall be considered for renewal or revision.

3.2 Membership obligations and entitlements

- 3.2.1 The ICSM has funds (US\$ 7 500 on 31 March 2017), contributed by members during the first term, to cover routine expenses associated with the running of the ICSM (administrative costs for postage, courier, telephony, photocopying, typing, printing, binding; web site development and maintenance costs; banking costs; rent for venue and cost of refreshments and meals for ICSM meetings). Any surplus remaining after the membership fees have been used to pay ICSM's routine expenses, will be used to further the aims of the ICSM as approved by a majority of members during business meetings of the ICSM ("business meetings") held according to 3.2.4. Upon termination of this agreement all remaining ICSM funds will be returned to members in proportion to the contribution made by each one.

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- 3.2.2 New membership applications to the ICSM shall be discussed and approved only by a simple majority of attending members during business meetings. The existing members may include such conditions as they deem fit in approving an application for membership, including but not limited to imposing buy-in fee on a new member ("the buy-in fee"). Membership shall be effective only after payment by new members of the membership fee for that year and the buy-in fee, if applicable. Prospective members may attend the business meeting as observers.
- 3.2.3. Members may withdraw at any time after 1 November 2018 upon written notification to the Management Committee (as defined in 3.3.1) of ICSM. Resigning members shall continue to comply with 3.1.2.
- 3.2.4. Members must conduct business meetings at a place and time agreed by a majority of members during a business meeting. Business meetings will be considered a properly constituted quorum and decisions from it binding, when three or more members are present. Members at a business meeting can authorise completion of a business decision by approval following scrutiny of e-mail documentation circulated to members by the Chairperson of ICSM.
- 3.2.5. In addition to the membership fee, members may contribute on a voluntary basis to the costs of human and other resources required by the ICSM to implement research projects aimed at meeting the objectives of the ICSM.

3.3 Organization

- 3.3.1 The ICSM shall elect, by nomination and subsequent show of hands, a Management Committee at an annual business meeting ("the Management Committee") and its term of office shall be until the next such business meeting. The Management Committee shall consist of two members comprising a Chairperson, a Secretary/Treasurer, preferably from at least two member organizations.
- 3.3.2 The Treasurer of the Management Committee, in accordance with internationally accepted accounting practices and principles, shall keep the ICSM membership and project funds (see 3.4.6) in his/her country of residence, segregated from other funds by opening an ICSM bank account. The Treasurer shall not expend any funds except (1) in accordance with the annual budget approved by a majority of attending members during the preceding business meeting, and (2) with the approval of project managers (see 3.4.7), if applicable. In addition to the Treasurer, the Management Committee shall designate, from time to time, one other co-signatory for countersigning expenses.

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3.3.3 The Treasurer shall prepare and circulate to all members final statements of account annually two months after the end of the financial year of the host institution, which have been audited in accordance with internationally accepted accounting practices and principles.

3.3.4 The Management Committee shall set agendas for business meetings, compile and circulate minutes of all business meetings to all members within a reasonable time after the relevant meeting and procure the implementation of decisions reached during any business meeting.

3.3.5 The Management Committee may publicise the ICSM and develop partnerships and collaborations with non-members at no cost to and for the benefit of the Consortium.

3.4 ICSM projects

3.4.1 Projects shall be governed by memoranda of agreements ("MoA") between project participants. Draft MoAs shall include a detailed project proposal using the ICSM template, which shall be made available to the ICSM Chairperson on or before a date as determined by the Chairperson, who will circulate it to all ICSM members for comments prior to submission of final drafts for consideration at the business meeting. Final drafts of MoAs shall be submitted to the Chairperson at least one month before the date scheduled for the next business meeting.

3.4.2 Projects may only commence after the proposed project is approved during a business meeting by a majority of attending members or in accordance with the provisions of Clause 3.2.4, and after the project MoA has been signed by project participants.

3.4.3 Access to intellectual property and other products emanating from projects shall be prescribed by the relevant MoAs. Financial and other contributions to projects shall be prescribed by the relevant MoAs.

3.4.4 Projects may be proposed by members on their own initiative or following solicitation by the ICSM. Participants may act as sponsors and/or research providers and/or project managers.

3.4.5 External service providers may be contracted for a project, after ICSM or project team approval (see 3.4.2), whenever the expertise and/or resources

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are not available within member organisations. The scope and detail of the external service provision shall be described fully in the project MoA.

3.4.6 Members who act as sponsors must contribute financially as prescribed by the relevant MoA. Members who are research providers must deliver the research products specified in the relevant MoA.

3.4.7 Members who are project managers must procure the proper and timely project execution and manpower and budget utilization as specified in the relevant MoA. Members who are project managers shall provide a written report annually to all ICSM members.

The undersigned hereby agree to the terms and conditions set out in this document.

Signed at Montpellier on this 18 day of November 2017



for the Centre de Cooperation Internationale en Recherche Agronomique pour le Développement (CIRAD) who hereby warrants that (s)he is duly authorized to sign this agreement on its behalf

Full names: GEORGEAUX Edward
 Designation: Head of Aida Unit by interim
 Address: Avenue Agropolis
34398 Montpellier cedex 5
FRANCE

Signed at Chiang Mai on this 22nd day of May 2018

for the Chiang Mai University who hereby warrants that (s)he is duly authorized to sign this agreement on its behalf

Full names: Prof. Emeritus Avudh Srisukri, M.D.
 Designation: Vice Chairman of University Council, Acting President
 Address: 239 Huaykaew Road, Suthep, Muang
Chiang Mai 50200 THAILAND

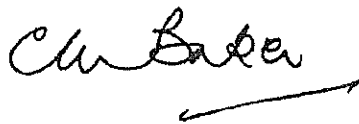
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Signed at _____ on this _____ day of _____ 2017

for the **Commonwealth Scientific and Industrial Research Organisation (CSIRO)**
who hereby warrants that (s)he is duly authorized to sign this agreement on its behalf

Full names: _____
Designation: _____
Address: _____


Signed at MT EDGECOMBE on this 30th day of OCTOBER 2017



for the **South African Sugarcane Research Institute** who hereby warrants that (s)he is
duly authorized to sign this agreement on its behalf

Full names: CAROLYN BAKER
Designation: DIRECTOR
Address: 170 FLANDERS DRIVE
MOUNT EDGECOMBE, 4300
SOUTH AFRICA

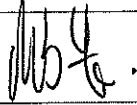
Signed at Belle Glade, Florida on this 31st day of October 2017 2017


for the **Sugar Cane Growers Cooperative (Florida, U.S.A.)** who hereby warrants that
(s)he is duly authorized to sign this agreement on its behalf

Full names: JaMES M. Shine, Jr.
Designation: Sr. Vice President - Agriculture Division
Address: 1500 West Sugarhouse Road
Belle Glade, Florida
USA

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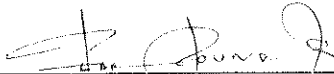
Signed at BRISBANE on this 16th day of November 2017

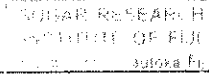


for the **Sugar Research Australia** ^{Limited} who hereby warrants that (s)he is duly authorized to sign this agreement on its behalf

Full names: Neil Fisher
 Designation: Chief Executive Officer
 Address: 50 Meiers Road, Indooroopilly, Brisbane, Queensland,
Australia, 4068

Signed at Lautoka on this 17th day of November 2017






for the **Sugar Research Institute of Fiji** who hereby warrants that (s)he is duly authorized to sign this agreement on its behalf

Full names: Pedro Rounds
 Designation: ICT Support Officer
 Address: Drasa Rd No. 18, Drasa, Lautoka,
Fiji

Signed at _____ on this _____ day of _____ 2017

for the **Zimbabwe Sugar Association Experiment Station** who hereby warrants that (s)he is duly authorized to sign this agreement on its behalf

Full names: _____
 Designation: _____
 Address: _____


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4. REFERENCES

- Inman-Bamber, N.G. 1991. A growth model for sugarcane based on a simple carbon balance and the CERES-Maize water balance. *S. Afr. J. Plant Soil* 8(2): 93-99.
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