WORKING GROUP ON WATER FOR BIO-FUEL AND FOOD (WG-BIO-ENERGY)

DRAFT SCOPING DOCUMENT

1. Background

- 1.1 Rising energy prices, geopolitics and concerns over the impact of greenhouse gas emissions on climate change are increasing the demand for biofuel production. Over the last two decades, biofuel production has increased dramatically. For example, bioethanol output experienced an increase from 16.9 to 72.0 billion liters while biodiesel grew from 0.8 to 14.7 billion liters between 2000 and 2009. At present biofuel production is estimated at 35 billion liters, accounting only for a small part (2%) of the 1200 billion liters of annual gasoline consumption worldwide. But the contribution of biofuels to energy supply is expected to grow fast with beneficial impacts including reductions in greenhouse gasses, improved energy security and new income sources for farmers. However, biofuel production and use have both positive and negative environmental and socio-economic consequences. Specifically, biomass production for energy will compete with food crops for scarce land and water resources, which is already a major constraint on agricultural production in many parts of the world.
- 1.2 With the emerging new challenges for agricultural water management, ICID established a Task Force (TF-BIO-ENERGY) in 2010 headed by Dr. Laurie C. Tollefson to evolve its position on Water for Bio-Energy and Food¹. The task force was renamed as WG BIO-ENERGY at the 64th IEC meeting, Mardin, 2013. The chair and other core members completed a technical report with contributions from all group members at the 22nd ICID Congress and 65th IEC meeting, Gwangju, 2014. The report presents a holistic review of the state-of-the-art of bio-energy production and policies in different countries, the intertwined linkage among bio-energy, water, and food, a summary of the perspectives from all contributing country members. In view of the importance of the bio-fuels in reducing emission of green-house gases, the members of WG BIO-ENERGY and PCTA felt the need to develop an awareness and understanding among the national committees regarding bio-energy issues so that they are able to better understand various facets of bio-energy production and their impacts on the water availability for food production and ensure their participation in the deliberations on the issue of bio-energy within their country and contribution in the policy dialogues. Accordingly, continuation of WG was recommended and WG was requested to develop a new Scoping Document to reorient its objectives and the scope of its activities.

2. Objective and Mandate

- 2.1 Relevance of the Working Group (WG)
- 2.1.1 The expansion and intensification of biofuel production is growing fast, which could add to existing pressures on land and water management. The technology of biofuel production is also developing fast, which will recast the nexus among biofuel, water and food. As stated above, therefore, the objective of the working group is to stimulate discussion and raise awareness of water and food security issues associated with biofuel. Specifically, the relevance and mandate of the WG can be specified as follows:
 - (a) To enhance understanding of the nexus between bio-energy, water and food production/food security among the ICID community;
 - (b) To share the information about recent progress and future prediction of biofuel production and use;
 - (c) To explore and analyze the implications of existing and new biofuel technologies on water resources availability, food production and rural development;
 - (d) To enhance discussions on appropriate promotion policies for biofuel production and its use with due considerations to the countries need to balance food and energy, urban and rural, carbon and economy, etc.;
 - (e) To join the international dialog on the nexus among biofuel, water, and food.
- 2.2 Relevance of the Working Group to the scope of the Thematic Area
- 2.2.1 For the relevance of the WG to the scope of the Thematic Area, the same argumentation is applicable as shown under the relevance. One of key objective is to better understand nexus of water-food and energy including implications of bio-fuel on diversion of land and water from food production to bio fuel production in the context of food security.

¹ Task force is completing its mandate with extended period in 2015.

- 2.3 Existing gap that the Working Group is expected to fill
- 2.3.1 ICID working group (WG-Crop) has mandate to investigate use of energy crops for bio-fuel production but there is a gap in dealing with nexus of water-food-energy specifically implication of diversion of lands and water for bio-fuel production on food security. This group is proposed to fill this gap.

3. State of knowledge on the topic

- 3.1 Other International Organisations that are working on the subject
- 3.1.1 There are several other International Organisations that have programs and activities on this topic. This especially concerns the:
 - (a) Food and Agriculture Organisation of the United Nations (FAO);
 - (b) International Fund for Agricultural Development (IFAD);
 - (c) United Nations Environment Programme (UNEP);
 - (d) World Agroforestry Centre (ICRAF);
 - (e) Organisation for Economic Co-operation and Development (OECD)
 - (f) Professional international associations, like: International Petroleum Industry Environmental Conservation Association (IPIECA), etc.
- 3.2 The niche that ICID is expected to fill in this area
- 3.2.1 The specific niche that this WG can fill on the issue highlighted under "Scope" can be formulated as follows:
 - to exchange information and network on the issues in order to be up to date with new developments, methods and approaches;
 - (b) to review and prepare a condensed overview of existing literature and other relevant publications on the issues:
 - (c) to prepare and present reports and/or case studies on recent development in the countries that are represented in the WG;
 - (d) to organise international workshops, seminars or symposia on the issue;
- 3.2.2 This can be the basis to present recommendations and if mature a position paper on key issues of bio fuel production and its impact on food security in different countries and paper on the topic for publication in *Irrigation and Drainage (IRD)*.
- 3.3 How is the Working Group expected to collaborate with the other International Organisations?
- 3.3.1 International Organisations can contribute to the activities of the WG by nominating Permanent Observers (PO). On the other hand presentations of the work and achievements of the WG can be presented at the occasion of events organized by International Organisations.

4. Work Plan

- 4.1 Scope
- 4.1.1 The working group is expected to investigate, analyze, and disseminate information on new developments and to formulate recommendations with respect to:
 - (a) the assessment, monitoring and predictions of impacts of biofuel production and usage policies on agriculture water management,
 - (b) the appropriate national policies for biofuel effecting agriculture water management in different countries,
 - (c) the strategies which agriculture and irrigation authorities can adopt to support biofuel promotion policies of their government,
 - (d) the international dialogue on biofuel and agricultural water management between regions and countries.

4.2 Target Audience

4.2.1 The target audience for this working group will be the National Committees and its members who might be called upon by their governments to advise on various facets of biofuel policies, its implications on water resources management, particularly on agriculture water management, food production, and setting up regulatory mechanism.

4.3 Outputs

- 4.3.1 The following outputs are expected from this working group:
 - (a) sharing knowledge and experiences by representatives of National Committees, and disseminating this knowledge within their country;
 - (b) presenting condensed overview of national policies and relevant publications on the topic;
 - (c) organizing or co-organizing at least one workshop, seminar or symposium in every two years at occasion of an international ICID meeting; and
 - (d) distributing ICID experiences in practice for countermeasures for water and land competition from biofuel production.

4.4 Timelines

- 4.4.1 Biofuel production is in a fast development and the nexus among biofuel, water and food is rather complex. Therefore, it is recommended that the term of this working group be set at 4 years. The timeline would have to be based on the scope of work and the expected outputs. Details of the timeline would have to be formulated and refined at the meeting of the working group.
- 4.5 Collaborators and dissemination strategy
- 4.5.1 The working group would have to base its activities on an open attitude with a clear scope for invitation of outsiders that are interested in the topic.
- 4.5.2 The dissemination strategy would have to be based on reaching those who can apply the findings and recommendations of the working group in their research and especially in policy development, decision making and implementation in practice.

6. Core Group

6.1 The draft has been circulated among the members of WG-BIO-ENERGY. Comments received from the members of the WG have been included in this scoping document. The Core Group consists of:

Convenor: Fuqiang Tian
Member: Laurie C. Tollefson

7. References

- (i) D Rajagopal, S E Sexton, D Roland-Holst and D Zilberman. Challenge of biofuel: filling the tank without emptying the stomach? Environ. Res. Lett. 2 (2007) 044004 (9pp). doi:10.1088/1748-9326/2/4/044004
- (ii) Giovanni Sorda, Martin Banse, Claudia Kemfert. An overview of biofuel policies across the world. Energy Policy 38 (2010) 6977–6988.
- (iii) Charlotte de Fraiture, Mark Giordano and Yongsong Liao. Biofuels and implications for agricultural water use: blue impacts of green energy. Water Policy 10 Supplement 1 (2008) 67–81.
- (iv) UNEP (2011), "The bioenergy and water nexus' http://www.unep.fr/energy/bioenergy
- (v) UNEP (2011), "Water and bioenergy", Issue Paper No 2, Bioenergy Issue Series, http://www.unep.fr
- (vi) GöranBerndes, (2008), "Water demand for global bioenergy production: trends, risks and opportunities" Göteborg, Berlin 2008. http://www.wbgu.de/wbgu_jg2008_ex02.pdf



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ⁱ Annex 3 [66th IEC Agenda Appendix XX, page 187]