WHITE PAPER

CHEMRAWN XII: WORLD CONFERENCE ON CHEMSTRY, SUSTAINABLE AGRICULTURE AND HUMAN WELL BEING IN SUB -SAHARAN AFRICA

Background

The CHEMRAWN (CHEMical Research Applied to World Needs) Committee of the International Union of Pure and Applied Chemistry (IUPAC) promotes initiatives in several areas of human need, based on the recognition that chemists worldwide, especially working in a multidisciplinary context, possess the skills, expertise and analytical tools to help address some of mankind's acute problems. Past CHEMRAWN Conferences have focused on the alleviation of hunger, the acquisition and development of raw materials, the development of new energy sources and strategies for beneficial management of conventional ones, the development of environmentally benign industrial processes, and the proper management of the world's natural resources and the environment, among other issues. Through these conferences, priorities for tackling these problems and needs are defined, and information needed for meaningful, effective and sustained interventions by government, the private sector and non-governmental agencies is disseminated in each instance through a Future Actions Committee, which develops a set of actionable and mission-specific recommendations with concrete follow-up actions and programs. CHEMRAWN Conferences are organized to involve leaders in government, industries, the academia, United Nations agencies and other multilateral organizations, donor agencies, and non-governmental organizations, so that the problems under discussion are approached from a variety of critically important and relevant perspectives, to include human behavior and responses; this strategy promotes consensus building, cross interactions and partnership formation that are indispensable for concerted and comprehensive follow-up actions.

Africa: a continent of food insecurity, poverty and a high index of human misery

The problems facing the African continent, especially the sub-Saharan region, are enormous and demand urgent action in order to avert impending tragedy. With a population of well over half a billion which is still growing rapidly, increasing poverty levels, food insecurity, health and human well-being problems of disturbing proportions, and crumbling economies, the region presents a picture of high misery index that is a blight on modern civilization. Yet it is a certain fact that the region is well endowed with human and natural resources, which if properly harnessed and managed, shall usher in an era of development and prosperity that will make the region less of a liability to the developed world. Of particular concern is the food and agriculture situation in sub-Saharan Africa. Food production targets fall far below acceptable minimum levels, being critically in deficit in relation to the population. It is a well-known fact that the specter of hunger and famine hangs over the region in the foreseeable future if drastic ameliorating actions and initiatives are not undertaken. Agricultural production has largely remained in the hands of peasant small-holder farmers, tied to traditional slash and burn low-yielding modes of production, with outputs that at best satisfy subsistence levels. In cases where modern agricultural methods have been introduced as a result of interventions by multilateral, donor and non-governmental agencies, short-term gains that are recorded evaporate at the end of the intervention period because appropriate technologies have not been transferred to or understood by the local populations. The combined effects of traditional modes of production and ill transferred technologies are manifested in continuing low productivity and environmental degradation. Thus the cycle of poverty and hunger continues.

CHEMRAWN XII: Conference on Chemistry, Sustainable Agriculture and Human Well-Being

The CHEMRAWN Committee has considered the scenario described above and has come to the conclusion that the need exists for proven chemical and soil management technologies to be transferred to Africans, so that the stock of knowledge and a dynamic approach to anticipating problems and evolving timely solutions in agriculture is imparted to the African people themselves, as a mechanism for driving towards sustainable agriculture and raising the standard of living of the African people, especially the rural majority. Consequently, the Committee has approved that a Conference on Chemistry, Sustainable Agriculture and Human Well-Being be organized as an initiative to motivate sustained action on the identified need, so that over time, indigenous capacity can be built among the African people to drive and sustain scientific agriculture in order to raise significantly the food output of the region and ensure food self-sufficiency and food security in the long run. An earlier CHEMRAWN conference in 1982, CHEMRAWN II, addressed the issue of "Chemistry and World Food Supplies: The New Frontiers", and is the forerunner of the

presently planned conference, which shall integrate recent advances in increasing food production with careful and responsible care of the environment, especially as applied to Africa.

Conference Overview

1. Objectives

CHEMRAWN XII will bring together leaders in the chemical, the soil and the agricultural sciences, who have made impact in the area of enhancing food production and food security, government, the private sector, and multilateral and non-governmental agencies to achieve the following objectives:

(i) Highlight the roles of, and recent advances in, chemistry and allied sciences in increasing per capita food production while protecting the environment by:

- Reversing the decline in soil fertility in Africa
- Enhancing pest management strategies
- Improving plant and animal germplasm via biotechnology
- Intensifying, diversifying and transforming small-scale African agriculture through high-value products.

(ii) Provide concrete examples of successful research related to the above.

(iii) Emphasize strategies for technology transfer and adaptation to continually address the problems of agricultural production and environmental preservation as they arise.

(iv) Identify knowledge gaps, policy constraints and priorities for the short, medium and long term.

(v) Foster private sector participation in increasing food security and access to markets, as well as its strategic importance in driving relevant research.

(vi)Highlight gender issues in African agriculture and strategies for economic empowerment of rural women who play important roles in food production.

(vii) Involve young African scientists in the dialogue on sustainable agriculture as a means of stimulating their interest and long-term participation in research, development and outreach in scientific agriculture.

(viii) Ensure that the conclusions reached at the Conference are translated into action by African governments, the scientific community, and the private sector, through the sustained activities of the Future Actions Committee.

2.Tentative speakers

The organizers will invite world authorities on food and development issues as plenary and invited speakers, such as President Jimmy Carter; Dr. Per Pinstrup-Andersen, Director-General of IFPRI; Professor Thomas R. Odhiambo, former Director of ICIPE and RANDFORUM, Kenya; Professor Francis Idachaba, Deputy Director-General of ISNAR; Dr. Uzo Mokwunye, Director of the United Nations University Institute for Natural Resources in Africa; Professor S.O Wandiga of the Kenya National Academy of Sciences; Professor H.C van der Plas of NATURA, Wageningen, The Netherlands; and other distinguished professionals who have made seminal contributions to the concept of sustainable agriculture.

3. Expected Outcomes

A Future Actions Committee shall harness the ideas and strategies for enhancing the synergy between chemistry and sustainable agriculture accruing from the conference, to result in specific outcomes and activities. These shall include: (a) organization of sub-regional workshops to address location-specific issues and problems; (b) arranging visits to agricultural centers in the United States, Canada and a few other western countries by young African scientists engaged in research in food-related disciplines; and (c) sponsoring research and studies in soil conservation technology, environmentally benign pest control methods, improved methods of food storage that incorporates indigenous knowledge, improvements in water quality, etc. Other expected outcomes of the conference through the activities of the Future Actions Committee shall include:

- Heightened awareness by governments, the private sector and development agencies of the quantum of technological and policy options available for increasing food security and protecting the environment and natural base.
- Stimulation of African scientists to undertake research aimed at contributing to solving the problems of sustainable agriculture and human well being, by forging productive linkages with experienced and successful scientists in the developed countries, as a means of continuously upgrading, adapting and transferring relevant technologies.

- Pilot development projects put in place in farming communities in different parts of Africa.
- Private sector-led rural industries based on the transformation of high value products such as fruits, floriculture, vegetables, etc.
- Wide-scale adoption and utilization of successful and proven technologies and policies

4. Audience

The conference will ensure representation from the full range of stakeholders (governments, NGOs, political observers, policy makers, the academia, agriculturists, soil scientis ts, natural and social scientists, environmentalists, donor agencies, etc.) from developed and developing countries in order to maximize interactions that can be translated into concrete action. In particular, the participation of young African scientists will be encouraged in order to ensure that the concerns and practical solutions evolved at the Conference are transmitted over time through generational awareness and actions. About 200 participants are expected.

5. Papers

Eminent scientists, agriculturis ts, and policy makers who have made contributions in the areas covered by the Conference theme are being approached to present plenary and invited lectures. In addition, there will be voluntary oral contributions and poster presentations. Discussion sessions will be organized in order to sharpen the focus of the sub-themes and maximize interpersonal interactions as a means of fostering future collaborations.

6. Conference Venue and Dates

The CHEMRAWN Committee shall in due course take a decision on the venue of the Conference which shall be either Stellenbosch, South Africa or Dakar, Senegal, at a date in 2005 to be worked out. An International Scientific Committee is being constituted and a Local Organizing Committee is being put together to take charge of the organizational and scientific programming aspects of the Conference.

7. Budget

A Conference budget of US$200,000 is proposed.

8. Sponsors

In addition to sponsorship by IUPAC, the American Chemical Society, the International Fertilizer Development Centre, the Third World Academy of Science, and Support Africa International have demonstrated keen interest in co-sponsoring the Conference. Efforts are on hand to enlist the financial support of multilateral agencies and donors for the Conference.

AN APPEAL

Clearly, this is a worthy cause to address an urgent problem before it develops into full-blown disaster. We appeal to all men and women of good will to enlist their support for this cause. We need support in terms of financial facilitation, high-level participation in order to ensure high caliber output, and ideas and suggestions on how to carry through this project to make lasting impact.

Contact persons:

Ikenna Onyido
Professor of Chemistry
Director, Center for Agrochemical Technology
University of Agriculture
P.M.B. 2373
Makurdi, NIGERIA
Tel: (234) 044 533204/5
Fax: (234) 044 534040
Email: ikennaonyido@yahoo.com

Erwin Buncel
Emeritus Professor of Chemistry
Department of Chemistry
Queen's University
Kingston
CANADA K7L 3N6
Tel: (613) 533 2653
Fax: (613) 533 6669
Email: buncele@chem.queensu.ca