WFEO Report of attendance at United Nations Commission on Sustainable Development (UNCSD- 16)

The meeting was held at the United Nations Headquarters from 5th May to 16th May 2008

DELEGATION

The WFEO delegation comprised the President, Barry Grear, the Chair of the Standing Committee on Capacity Building Dan Clinton, the Chair of the Standing Committee on Environment Darrel Danyluk, the Chair of the Standing Committee on Energy Jorge Spitalnik and Mike Sanyo ASCE.

We were teamed with ICSU (International Council for Science) as a major advisory group under the title “Science and Technology”.

The other major groups are women, non-government organizations, business and industry, children and youth, local authorities, indigenous people, workers and trade unions, and farmers.

ATTENDEES

The meeting involved approximately 1300 people including Ministers of Environment, Ministers of Infrastructure, Ministers of Agriculture from about 25 countries, the other countries had their executives of similar departments. A total of about 100 countries were represented.

THEME

The main theme for 2008/9 is Agriculture, rural development, land, drought, desertification and Africa. The Commission operates with the first year being devoted to understanding the issue and the second year in discussing and agreeing to solutions.

REPORTING ARRANGEMENTS

The Commission reports to the Economic and Social Council (ECOSOC) and through it to the General Assembly.

There were prepared inputs from invited speakers as well as many statements by individual country and major group representatives.
The Scientific and Technological Community Major group made 17 statements of which 11 can be sourced on the web at
http://www.un.org/esa/sustdev/mgroups/about_mgroups.htm

The process in the lead up to UNCSD-17 which will be held on 4 to 15 May 2009 will involve regular conference calls attended by Jorge Spitalnik and an intergovernmental Preparitory Meeting scheduled on 23 to 28 February. Our appointee to that meeting will be decided when the location is determined.

RESPONSES

Climate change (although I now prefer to use the phrase “changing climate” as it is not steady state) and adaptation to climate change in relation to agriculture were mentioned by many speakers. Climate change is expected to affect water resources and to have a strong impact on drought and desertification. Climate change was for some speakers the most urgent challenge faced by African countries, the Small Island Developing States
and other countries whose economies depend on activities affected by climate.

The key points being made by attendees at UNCSD-16 was to gain a broad understanding of the issues surrounding the topic being addressed. The UNCSD-17 in 2009 will challenge the attendees to propose solutions to these problems.

The role of engineers, through WFEO, is to help developing countries devise adaptation strategies through financial assistance, technology transfer and capacity building.

WFEO RESPONSE

Key point - much of the needed knowledge already exists within the scientific and engineering communities; however, the knowledge often does not reach those that could benefit the most. Capacity building, focused on sharing the existing knowledge effectively must be a priority.

Key outcomes and statements reported by the attendees that are related to topics that the engineering organizations can consider with a view to preparing responses are as follows:

1. To achieve sustainable development in these key areas there will need to be an enabling environment, good governance, and institutional structure that encourage and assist, as well as capacity building. There is a strong need for strengthening science research and education focused on solutions. There must be mechanisms for facilitating dialogue between scientists and technologists, decision makers and farmers. WFEO will work with these groups to improve extension services so that information and solutions get into the hands of farmers, particularly small–scale farmers. An example of the problem is that half of the food grown is wasted before it can get to the consumer through poor harvesting techniques and incorrect storage allowing vermin to attack and product rotting to occur.

2. Productivity and competitiveness in most sectors is low, inhibiting the potential of Africa to move into higher value-added activities beyond bulk commodities. Low levels of private sector investment, weak domestic financial markets, lack of technological capacities and limited transfer of technologies are among the obstacles to economic diversification and industrial upgrading.

3. Efficient water resources development and management as well as reusing safe wastewater can be a key factor in increasing resilience to climate changes and ensuring food security. Also, improved irrigation efficiencies and on-farm management practices could contribute towards overcoming water shortages and enhancing food security.

4. The use of food crops for producing biofuels has been a source of concern for many countries. However, biofuels can help overcome fossil fuel dependency and provide employment opportunities if their production meets sustainability criteria. Focusing efforts on those biofuels which do

not compete with food production can offer promising results to mitigate climate change and to stimulate economic and rural development.

5. Increased interaction among scientists, policy makers and local communities can accelerate the dissemination and adaptation of new and emerging technologies and corresponding knowledge from laboratories to field application in developing countries, with assistance from development partners.

6. Investments in research and development particularly in innovative and sustainable agricultural technologies and infrastructure are urgently required. The international community should step up support to investments in agriculture and substantially increase official development assistance in support of international research and on-the-ground outreach, training and extension services in agriculture.

7. Capacity building, transfer of technologies in accordance with the Bali Strategic Plan for Technology Support and Capacity building, technical cooperation and partnership are needed.

8. Scientific solutions are critical to increasing agricultural productivity. Investment in science and technology, training, capacity building and information sharing are important for addressing long-term constraints.

9. Climate change was identified as a major challenge for many countries in terms of its potential impact on water and food security, contributing in particular to an increase in extreme hydrological events such as floods and drought.

10. The absence of water treatment facilities in certain areas poses an obstacle for environmental management and for providing safe drinking water. This obstacle could be overcome by developing and implementing sustainable water and sanitation plans which takes into account wastewater management. In this regard, it is important to use technologies that are suitable to local conditions.

11. Response to the current food crisis requires an increase in agricultural productivity, while ensuring that natural resources are managed in a suitable manner, and ecosystems are preserved. Reducing pre- and post – harvest losses, which average around 50% globally and are highest in developing countries, demands transfer and dissemination of existing technologies and management practices, including risk management tools, and provision of good science to small-scale farmers in rural areas. The response to the food crisis should look at both causes and symptoms, but disaggregated statistics of natural, human, social and physical capital are often missing. Further studies should help to increase understanding

of the impacts of biotechnology and biofuels in relation to food security with a view to developing a balance between biofuels and production.

THE WFEO CHALLENGE

The challenge for WFEO and the world engineering community will be to propose solutions for tabling in 2009 and then arguing for their acceptance. All national and international members are being asked to consider the 11 points above and submit ideas and solutions which have been successful in their own areas that the delegates can propose at UNCSD-17.

If further information is required then please contact and of the WFEO attendees who can offer other comments and may have other supporting material.

WWW.un.org/esa/sustdev/csd/review.htm

May 05/2008
CSD-16
Intervention
Technological and Scientific Community
Thank You Madame Chair
On behalf of the Scientific and Technological Community and specifically the 15 million engineers represented by the World Federation of Engineering Organizations we are pleased to participate in the CSD process.
Everyday these Engineers contribute and are major actors in the agricultural sector through activities in fertilizer production, equipment development, transportation modes, waste management, the bio-fuel industry, and most importantly irrigation and water management.
Our comments today will briefly address four key areas:

- The rapid growth of the demand curve and the need to decouple the debate into short term, mid term, and an endless perspective.
- The future of fertilizer in sustainable agriculture
- The effective and efficient use of water
- The discussion around bio-fuels versus food production

In our view the discussions and debate on agriculture and food production should be considered in 3 parallel streams:

First to address the urgent needs of the worlds hungry, in essence a reactive phase that has the ability to provide immediate relief and to facilitate short term local and regional needs. Bringing knowledge and engineering to build capacity in the local and small farming communities can effectively and efficiently increase food production.

Second mid-term stream that addresses the challenges of feeding 9 billion people in 2050. Efficiency and effectiveness are keys to these discussions.

And lastly to acknowledge that feeding 9 billion people by 2050 is a significant challenge. However we must not loose sight that there is a future beyond 2050 and food production must be sustainable beyond that date.

We are concerned that the depletion of natural resources for fertilizer will significantly impact the worlds' food production capacity. There is a key need to manage these resources to eliminate waste and to look for opportunities to recycle this resource. For example, the new technology of "mining" phosphorus from the worlds wastewater treatment plants for reuse and this would have an additional benefit of reducing environmental impacts on receiving water bodies.

There is a need to recognize that irrigation extractions from water courses must take into account the limits required for environmental sustainability of the water body and the downstream user needs. Irrigation is a consumptive use and if over used, the residual consequences can be serious. Effective irrigation practices minimize transmission losses as well as losses from evapotransporation. Consideration must be given for off – stream storage as this allows for the capture of peak/extreme events for future use.
Our last point is made with emphasis.
The debate on bio-fuels versus food production is a key part of the CSD process and these discussions. We note that other interventions have raised this issue. We in the Scientific and Technological community are keen to participate in these discussions in order to reach a consensus in the CSD-16/17 timeframe.
Thank You
Presented by:
Darrel Danyluk P.Eng
WFEO

May 06/08

Statement by the Scientific and Technological Community

CSD-16 - Dialogue with Major Groups Session
New York, 6 May 2008

Meeting rapidly growing demand for food is a major challenge for all stakeholders. An alliance between the farming communities and the relevant scientific and technological communities is needed in order to provide the necessary quantity and quality of food now and throughout this century—when world population is expected to reach nine billion and demand for food is expected to double.
To meet productivity AND sustainability criteria places increased importance on the multiple functions of agriculture:

- Enhancing the production of food, fibre and fuels
- Sustaining ecosystem services, and conserving natural resources and biodiversity
- Providing livelihoods to people (income, health and nutrition) and supporting the quality of rural life

The challenge for agricultural science and engineering is to provide good science and sound technologies to farmers in diverse socio-economic and ecological systems. Part of the needed
knowledge already exists within the scientific and engineering communities, however the knowledge often does not reach those that could benefit the most, in particular small-scale farmers in developing countries. Extension services and agricultural research targeted to these small farmers must be significantly strengthened. More investment in infrastructure development such as roads will be essential.
Targeting small-scale agricultural systems by forging public and private partnerships and increased public sector R&D investment helps realize existing opportunities.
Scientific and engineering approaches to crop improvement need to focus on:

- Enhancing yield efficiently
- Enhancing resource use (e.g. water and mineral uptake)
- Enhancing nutritional benefit

- Dealing with biotic stress (e.g. from pests, disease and weeds)
- Dealing with abiotic stress (e.g. from drought and temperature)

As regards the debate on biofuels versus food production, we suggest that a clear understanding of the benefits of biofuels to the environment and on the impact on food production and the economy is important to reaching a balanced approach.. More advantage should be taken of modern biotechnologies, while addressing public concerns about environmental and health risks, as well as the socio-economic and intellectual property rights issues surrounding their development and use—not the least in smallholder communities in developing countries.
There is also an urgent need to help farmers and pastoralists to adapt to ongoing climate change while reducing the vulnerability of the agricultural sector to seasonal and inter-annual climate variability and to extreme weather events, that is, floods, droughts and heat waves. In general, poor farmers are the most vulnerable to climate change.
The impacts of changing climate in drylands and desertification-prone areas may vary from region to region, depending on changes in rainfall and drought patterns. However, for the vast drylands of sub-Saharan Africa and Central Asia it is predicted that the frequency and duration of droughts will increase, putting these areas at an enhanced risk of desertification. The problem cluster of increased droughts and desertification ranks among the greatest environmental challenges and is a major impediment to meeting human needs in several developing regions.
The Discussion Paper by the Scientific and Technological Community, which is part of the official documentation of this CSD session, provides detailed information on ways and means to better harness science and technology for addressing the challenges highlighted in this statement. Major investments are urgently required in:

- Targeted research and development
- Extension services
- Education at all levels
- Scientific and technological capacity building and training

The Scientific and Technological Community is committed to work with all other stakeholders in ensuring the most efficient scientific, engineering and technological solutions for increasing agricultural production while strengthening the social, economic and environmental pillars of sustainable development

May 06/2008
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Thank You

Presented by:

Darrel Danyluk P.Eng

WFEO

7 May 2008

Contribution on Behalf of the Scientific and Technological Communities
James Hansen, International Research Institute for Climate and Society

Prediction and early detection of drought and its impacts can support early interventions that protect lives, livelihoods and the natural resource base; but only if intervention is well targeted, and if reactive institutional procedures and policies do not constrain early

response. Drought and food security early warning systems – already well developed across sub-Saharan Africa – should be strengthened. There are several technical enhancements that can combine multiple sources of information, improve lead time and accuracy of predictions of impacts, and make the tradeoff between lead time and accuracy more transparent. I'd like to highlight three additional areas of investment that contribute toward achieving the full benefit from climate-related early warning systems.
The first area is institutional. National meteorological and hydrological services need to be oriented and resourced as partners and service providers for development. This year marks the tenth anniversary of regional climate outlook forums (COFs) in Southern, Eastern and West Africa. There is a need to build on, but go beyond, the considerable successes of regional climate outlook forums; drawing, for example, on the experience of the MALOF in Southern Africa, which is designed and led by development stakeholders and underpinned by the climate community. Enhanced coordination of response between farmers and their advisers, rural market institutions, food crisis response organizations and natural resource managers is vital for moving rural communities beyond the cycle of poverty, vulnerability and dependency – sometimes referred to as the "relief trap" – and toward rural prosperity.
Second, substantial investment is needed in climate data and observing systems, to: (a) reverse decline and enhance spatial coverage of observation infrastructure; (b) to rescue and digitize paper records; and (c) to supplement and merge sparse observations with historic (~30 years now possible) and near-real-time remote sensing data. National policy should treat climate data as a public good and a resource for sustainable development.
Finally, there is an increasingly recognized, yet largely unmet need to extend early warning information to the vulnerable rural communities who are the ultimate stewards of fragile lands, managers of their own livelihoods and intended beneficiaries of intervention. Within an enabling environment, climate information services can allow farmers to more effectively protect their families and farms against the long-term consequences of adverse extremes; and also to adopt improved technology, intensify production, replenish soil nutrients and invest in more profitable enterprises in seasons when rainfall conditions are favorable. This will require investing in effective delivery mechanisms. Agricultural extension services (and their non-governmental and private sector counterparts) should be revitalized, resourced, trained, and engaged to provide climate and early warning information, and to foster and guide effective management responses. Investment in rural communication infrastructure (radio, ICT) is also needed both as an alternative vehicle to reach rural communities and to streamline information transfer to communication intermediaries (e.g., district agricultural offices).

7th May 2008
Parallel Session Conference Room 4
Session of Thematic Discussions on Agriculture and Rural Development
(Submission by Scientific and Technological Community John Stewart ICSU)
Dear Chair and Distinguished Delegates,
The Scientific and Technological Community welcomes this opportunity to address this thematic discussion on Agriculture and Rural development especially following the excellent panel discussions of both yesterday afternoon and this morning.

1 While acknowledging the fact that agriculture knowledge science and technology has contributed to substantial increases in agriculture production in the last 50 year, we stress that it has the capacity to deal with future challenges such as climatic

change and is capable of continuing to contribute to food security (Panelist Chris Leaver outlined very clearly the scientific potential of plant production).

2 We also are aware that people have benefited unevenly from these yield increases across regions in part because of different organizational capacities, socio-cultural factors and institutional and policy environments.

3 Emphasis on yield increases and productivity can in some cases have negative effects on the long-term sustainability of production. It was interesting to note in panelist Dr. Pender's presentation examples of areas where this negative effect was later ameliorated through careful application of existing science and technology.

4 We state that there is an urgency to apply this science and technology to persistent socio-economic inequalities. Examples of areas where there is an urgency of action would include

- reducing the risk of conflicts from competitive claims over land and water resources,
- assisting communities and individuals deal with endemic human and animal diseases
- flow of migrant laborers
- providing access to information, education and technology to poorer people (and especially women) through open, transparent engagement of all stakeholders

Wednesday morning, 8 May 2008

Contribution on Behalf of the Scientific and Technological Communities
James Hansen, International Research Institute for Climate and Society

We have heard much this week about the interactions between drought, climate change, environmental degradation, food production and rural livelihoods. I'd like to affirm this recognition, and encourage continued progress toward coordinating and integrating efforts to manage drought, adapting to climate change, and developing agriculture and rural livelihoods in the tropical drylands. Better management of climate risk and particularly drought, today, is an essential and feasible step toward reducing long-term vulnerability to a changing climate. In the drylands, farmers and pastoralists will experience climate change not so much as a gradual change in average conditions, but as changes in the frequency and magnitudes of droughts, floods and other extremes. Many of the anticipated impacts of climate change are amplifications of current climate-sensitive development and environmental challenges. Managing current climate risk more effectively may therefore offer win-win opportunities to contribute to legitimate current development priorities while reducing vulnerability to climate change over the longer-term in the vulnerable drylands of the tropics.

Several international initiatives are seeking to address the challenges of drought, climate change, environmental degradation, food production and rural livelihoods in an integrated manner. I note two emerging examples, cited earlier this week and in the background papers, which seek to address climate-related environmental and development issues in an integrated manner:

The Climate for Development, or “ClimDev Africa,” initiative of the Africa Union, Africa Development Bank and UN Economic Commission for Africa; and

The proposed CGIAR Global Challenge Program on *Climate Variability, Agriculture and Food Security* – involving a partnership of coordinated international agricultural research community, the global change science community, and their regional, national and local partners.

5 Many of the challenges facing agriculture currently and in the future will require innovation and integrated applications of existing knowledge and science from all sources whether formal, traditional or community based technology.
6 We suggest that existing opportunities will be realized by targeting small scale agricultural systems by forging public and private partnerships and increasing public and extension investment.
7 There is a range of such approaches in current use. Different problems will require careful selection of approaches to be used but these deliberations must be inclusive , transparent and community based.

9 May 2008

Presented by Gisbert Glaser, ICSU
Mr. Chairman,
Many partnerships exist world wide between farming and scientific and technological communities. The challenge for agricultural science and engineering is to provide good science and sound technologies to farmers in very diverse socio-economic and ecological systems. Much of the needed knowledge already exists within the scientific and engineering communities; however the knowledge often does not reach those that could benefit the most, in particular small-scale farmers in developing countries.
When focusing on small-holding communities in developing countries, we often rightly note our inability to match development interventions to peoples’ needs. Understanding rural vulnerability is critical now more than ever before, as we attempt to deal with the rising food costs and changing climate.
The Scientific and Technology Community will need a better understanding of the livelihood dynamics in rural communities, which as we all know are not homogenous and yet we continue to generate and attempt to implement one size fits all interventions. For the small-scale farmers, it is essential that any introduced technology be appropriate and low-cost for their particular site specific applications. To enhance technology uptake by the poor and women in particular, we need basic disaggregated statistics on the human capital base, social networks, the natural resource base, financial, physical resources and the coping mechanisms. This requires data that is collected on a longitudinal basis with databases that are updated regularly.
Unfortunately such information is not readily available because of insufficient investments in research and development; the whole infrastructure for data collection at household level is weak; institutions tasked with analysis of such data lack technical capacity and are usually under-staffed. Consequently, we bemoan the poor use of research outputs and yet we do not sufficiently understand the real needs by the farmers and pastoralists concerned. We continue to plan on the basis of inaccurate data generated from short term research studies leading to reactive

policies that fail to address the long term problem. The Scientific and Technological Community is calling for increased and consistent investment in R&D, starting with the resources needed to collect data on rural livelihoods- such as household surveys, production data, and data on use of natural resources. There is need to use local expertise in national universities to build information databases so that the information is locally owned and used for improved targeting and pro-active policy development.

Mr. Chairman, extension services and basic agricultural research targeted to these small farmers must be significantly strengthened. More investment in human capital through education and in infrastructure such as roads will be essential. As regards education, special attention should be given to the gender dimension. Targeting small-scale agricultural systems by forging public and private partnerships helps realize existing opportunities.

The uncertainty associated with recurrent droughts, climate variability and changing climate is a disincentive to investment in tropical drylands and adoption of agricultural technologies and market opportunities, prompting the risk-averse farmer to favor precautionary strategies that buffer against climatic extremes over activities that are more profitable on average. All avenues for managing climate risk must be exploited, not the least also in efforts to achieve a successful “African Green Revolution”. Promising investments in this regard include:

• Improved water management – from field-scale water harvesting and conservation, to large-scale surface irrigation systems where they are feasible;

Low-energy tillage and planting techniques in areas of mechanized farming; • Innovative financial mechanisms, such as index-based insurance, for transferring risk from vulnerable rural populations; • Climate information products and services that empower farmers and other agricultural stakeholders to better manage the risk that they face; and • Safety nets, and climate-informed early warning and response systems, that protect livelihoods as well as lives when climatic stresses exceed the coping capacity of rural communities.

Effective climate risk management will require greater coordination between the agricultural development, food security early warning and response, and climate science communities.

Farmers, national policy makers and research scientists are seeking reliable data and information based on long-term observations of numerous environmental and land use parameters related to all the topics reviewed at this CSD session. These data needs include: changes in land cover and land quality; desertification; availability of freshwater resources; loss of biodiversity; and impacts of climate change. In order to meet these data requirements, national long-term terrestrial observation systems should be strengthened and established where they do not yet exist. At the same time national observation systems should be nested in the global environmental observing systems, including the Global Climate Observing System.

Mr. Chairman, partnerships between the S & T Community and the other major groups and with governments are critical to the development and implementation of sustainable solutions. Government support for scientific and engineering capacity building and training at the local and national levels is a fundamental need, in particular in developing countries.

9 may 2008, 1145hrs

Thematic Discussions on AFRICA, UNCSD-16 New York.
A Call for a new regimen of research-extension interface and technology transfer

Mr Chairman, in our submissions in the past 4 days, the Scientific and Technology Community has emphasized the need for increased investments in Research and Development. Our ultimate objective is to increase technology uptake so as to improve the livelihoods of rural dwellers. The need for better infrastructure has been highlighted, however one area which we believe is key in promoting technology uptake is improved Information Communication Tools (ICTs). Africa's rural community needs better access to information if they are to move beyond farming to creating a dynamic rural economy. As researchers we are aware that the new agriculture-for-development agenda must be supported by far-reaching reforms in the traditional research and extension models in order to impart new skills and provide timely information across the value chain. Traditional models of research and extension delivery have done little to unleash the potential of the smallholder farmers. With the depletion of the extension worker force as a result of the HIV and AIDS pandemic, and low staff retention capacity, most African governments cannot meet the optimum extension worker to farmer ratio– therefore a new platform for "research-extension worker-farmer" interface will be critical in driving the new agriculture-for-development agenda. THIS IS THE OBSTACLE WE FACE
WHAT THEN ARE THE BEST PRACTICES-

Mr Chairman, In India the SwamiNathan Foundation has pioneered a rural knowledge network of Village knowledge centers (VKCs) which provide information across the agricultural value chain. These village knowledge centers are particularly suitable in the Sub-Saharan Africa context where self-employment in agriculture is, by far, the most dominant activity with those with skills and information having greater opportunities. There is, thus, need for an urgent policy priority for Africa to attract investments in ICTs so that new models of research and extension are adopted – in order to increase smallholder competitiveness in a new rural economy.

The Swami Nathan model extends timely and relevant research and extension information and skills through a Virtual Academy that connects via uplink and downlink satellites. This model brings together the experts and grassroots level communities in a real time two-way communication, through WiFi based video conferencing , satellite based video conferencing, offline CDs for both audio and video, community newspapers allowing knowledge to reach every household.

NEXT steps

New agricultural breakthroughs will not be realized without more and better international commitments to innovative approaches that link the multiple stakeholders at local, national and global levels. The scientific and technology community is ready to support the new agriculture agenda and is aware that this will require building new capacities for smallholder farmers and their producer organisations, new capacities for agribusiness, and new strategic partnerships between the state and other actors. Development partners and national governments will need to re-align their support to new extension models . Africa urgently needs investments in rural ICT, bridging the digital divide this will enable closer links and continuous interactions between researchers, providers of technologies and the users. This morning, Dr Ogunlade Davidson and other panelists in yesterday afternoon's session have all highlighted the need to strengthen South –South linkages, we believe Africa has a lot to learn from India with respect to ICT for the rural economy

Dr Lindiwe Majele Sibanda

May 12/2008
Thank You Chair
On behalf of the Scientific and Technological Community and specifically the 15 million engineers represented by the World Federation of Engineering Organizations we are pleased to participate in the CSD process.
Everyday these Engineers contribute and are major actors in the Water and Sanitation sector through activities in wastewater and water delivery, operations, maintenance and management. They are active in both the developed and developing world.
Access to reliable Water and Sanitation systems around the world provide global societies the foundation for healthy and clean environments and hence communities, We know that this access is not universal and many do have access let alone reliable access.
Access alone is not enough; Water and Sanitation systems are complex integrated systems regardless if they are urban or rural, they are interdependent and their sustainable operation, maintenance and management requires scientific and engineering knowledge.
Building Human Capacity with these skills at the national, regional and especially the local levels is essential to sustainability, and Chairman, the Technologies exist, the knowledge for efficient operations and maintenance exist, and various models for management exist. Transfer of this knowledge and building the human capacity is an important element in meeting the MDG's.
Chairman, briefly we present four points for your consideration;

River basin management as an accepted policy should be given consideration in these discussions to ensure sustainable and safe water supplies,

New pollutants of concern are emerging, e.g. endocrine disruptors, and we need to understand their impacts on both receiving bodies and downstream users,

Causes of the loss of technical human capacity from public utilities to the private sector and/or the developed world require identification and correction,

Sustainable utilities require sustainable resources to be operated and to be maintained, and in fact to meet the demands of growth. Financial models and instruments must address this need.

Thank You
Presented by:
Darrel Danyluk P.Eng WFEO

15 May 2008

Presented by Lindiwe Majele Sibanda, ICSU

Mr. Chairman,
The challenge for agricultural science and engineering is to provide good science and sound technologies to farmers in very diverse socio-economic and ecological systems. Much of the needed knowledge already exists within the scientific and engineering communities; however the knowledge often does not reach those that could benefit the most, in particular small-scale farmers in developing countries. When focusing on small-holding communities in developing countries, we often rightly note our inability to match development interventions to peoples' needs.

Understanding rural vulnerability is critical now more than ever before, as we attempt to deal with the looming problem of rising food costs and the changing climate.
Mr Chairman the Scientific and Technology Community is committed to helping Africa improve productivity and achieve its green revolution however, we need a better understanding of the livelihood dynamics in rural communities, which as we all know are not homogenous and yet we continue to generate and attempt to implement one size fits all interventions. For the small-scale farmers, it is essential that any introduced technology be appropriate and low-cost for their particular site specific applications. To enhance technology uptake by the poor and women in particular, we need basic disaggregated statistics on livelihoods and the coping mechanisms. This requires data that is collected on a longitudinal basis with databases that are updated regularly.
Unfortunately such information is not readily available because of insufficient investments in research and development; the whole infrastructure for data collection at household level is weak; consequently, we bemoan the poor use of research outputs and continue to plan on the basis of inaccurate data generated from short term research studies leading to reactive policies that fail to address the long term problem. The Scientific and Technological Community is calling for increased and consistent investment in Research, Development and engineering applications. There is need to use local expertise in national universities to collect data and build information databases so that the information is locally owned and used for improved targeting and pro-active policy development.
Mr Chairman, on effective climate risk management, we believe this will require greater coordination between the agricultural development, food security early warning and response, and climate science communities. There is need to strengthen national long-term terrestrial observation systems and to establish them where they do not yet exist; and these national observation systems should be nested in the global environmental observing systems, including the Global Climate Observing System.
Mr Chairman, we applaud the commitment by African Heads of State, to commit, under the NEPAD framework, at least 10% of their national budgets to the agricultural sector. We are happy too that the Forum for Agricultural Research in Africa (FARA) is tasked with the coordination of technology generation and dissemination Africa-wide. We believe that at least 1% of the national budgets should be devoted to Agricultural Research, Technology Development and Extension services. Investments in Education and Infrastructure, ICTs are key. Support for scientific and engineering capacity building and training at the local and national levels is a fundamental need, in particular in developing countries.
Mr. Chairman, there is scope for us to learn from each other in strengthening Government interactions with major groups.
We would like to commend the CSD for creating a platform that allows interaction and constructive dialogue between government and major groups such as the Science and Technology Community, Farmers, Business and Industry, Women, Workers and Trade Unions, and the Children and Youth and others.
We would like to see this partnership continue beyond this meeting, and be actualized into national multi-stakeholder policy dialogues, that lead to the creation of enabling environment for sustainable development.
We are aware that countries in the north have immensely benefitted from technologies and policy advice from think tanks and other major groups- this then

begs the question, “How can developing countries learn and adopt such mutually beneficial interactions between government and major groups?
Would governments, particularly in Africa be in a position to participate in formalized multi-stakeholder policy platforms such as this one at national level?
Mr Chairman, we are not talking enough, we are not sharing enough at country level, we need innovative models that enable constructive interactions; unless the agenda for sustainable development is in the hands of the ordinary citizens, our vision will remain a dream. We would welcome comments from Ministers on how best major groups can formally dialogue and engage with government at national level.

May 14th
High Level Round table on Inter-linkages
Science and Technology Major Group
Presenter BARRY GREAR WFEO

Mr Chairman,
On behalf of the Scientific and Technological Community we are pleased to make this intervention today.

As we have perused the Chairman's Summary from yesterday we are impressed that so many examples of progress were reported. Everyday Engineers and Scientists contribute their expertise to the Water and Sanitation sector through activities in water, wastewater delivery, operations, maintenance and management. They are active in both the developed and developing world.

Water and Sanitation systems are complex integrated systems in both the urban and rural areas, they are interdependent and their sustainable operation, maintenance and management requires scientific and engineering knowledge and experience.
There is much knowledge already available - now is the time to use that knowledge and the Technological and Scientific Community is available to help.

The changing climate requires us to have an accelerated application of the solutions. We support the need for the strengthening of the enabling factors of good governance, and institutional capacity building.

We are concerned that there be a strengthening of scientific research, education, data collection and monitoring as well as capacity building because disjointed and inadequate information poses constraints in developing countries as we believe building resilience requires in-depth knowledge of local area ecosystems, weather patterns, land use and demographic patterns. Such information is needed to formulate and promote robust early warning systems.

Chairman, our major group is ready and willing to help to ensure that productivity in delivering water and sanitation services are increased.

We believe increasing technological capacities, significant transfer of

technologies will improve the situation.
Improved irrigation efficiencies and on-farm management practices could assist in overcoming water shortages and improve food security.

Chairman, much has been done, we must all leave this place with the aim of going forward in practical applications from here.

May 16th 2008

CLOSING COMMENTS BY THE SCIENTIFIC AND TECHNOLOGICAL COMMUNITY

Mr. Chairman,

The Scientific and Technological Community acknowledges that the proceedings of CSD-16 highlighted the specific issues that need to be considered when dealing with sustainable development in relation to Agriculture, Rural development, Land, Drought, Desertification, Water and sanitation, as well as in Africa.

Issues like water and land management, enhancing food production and introducing biofuel agriculture, impacts of climate change, and the deficiencies of small scale farming in developing countries, were raised by many stakeholders. The recognition of their importance is not new, and has been the subject of many meetings in past years. Although there have been many examples of good practice, treatment of these problems has been made through projects of limited scope -in terms of land surface areas and numbers of people involved- to serve as examples of what could be done. However, with the timescale of this approach, the objectives of the Millennium Development Goals may not be accomplished within the specified time frames.

Regarding agriculture efficiency and rural development, the Scientific and Technological Community is able and willing to contribute its expertise and experience to increasing the yield of agricultural production by providing extension services to farmers, particularly those in charge of small scale farming, through the dissemination of existing knowledge and engineering techniques that in general are well known, not requiring leading edge technologies, and therefore involving low investment costs.

As for food production versus biofuel agriculture, we consider that there is not a straightforward answer in favor or against; there is a need of scientific and engineering analysis of the conditions of feasibility that govern both types of operation in terms of suitability of existing arid or semi-arid lands, soil characteristics and crop efficiency.

The Scientific and Technological Community is committed to work with all other stakeholders in ensuring the most suitable and efficient solutions based on available science, engineering and technology.

Jorge Spitalnik