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**Statement by the Scientific and Technological Community
CSD-16 - Dialogue with Major Groups Session
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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.