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**Gender Dimensions of Science and Technology:
African Women in Agriculture**

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Introduction:

African governments and international partners have made a commitment to women's and girls' access and participation to science and technology.

The views expressed in this paper are those of the author and do not necessarily represent those of the United Nations.
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Background:

Overall statistics for Africa conceal important country differences, but on average, the agriculture sector makes up about 30% of Africa's GDP¹ and 30% of exports². Agriculture supports 75% of the people by providing livelihood, trade and subsistence³. Therefore, agriculture is of great value to the people, and is vital to meeting the Millennium Development Goals (MDGs). Achieving the MDGs requires investments and operating expenditure. In order to make agriculture productive, capital accumulation and economic development⁴ are key areas. It is therefore important to enhance the contribution of African women to agriculture. Currently women comprise the majority of the disenfranchised living in the rural areas⁵. There is a considerable potential for increasing the role and participation of women in agricultural research, extension and development. But this potential has not yet been realized. In order to get a better grasp of the challenges facing women in agriculture, we must paint a picture of who she is.

Average African Woman	
Average literacy rate	Less than 60% ⁶
Average number of children ⁷	West and Mid Africa: 6 South and East Africa: 4.5 North Africa: 2-4
Land ownership	Less than 2% ⁸
Preferred crops	Subsistence ⁹
Responsibility of fetching water and fuel	Women and girls ¹⁰

Traditionally, in many African countries, women are not allowed to own or inherit land. This serves to further disenfranchise women because in agricultural communities, wealth and land are essentially the same. Moreover, access to land in many communities is governed by both statutory and customary law. In rural areas, local norms enforced by community elders prevail.

¹ World Bank. *Rural Development from Vision to Action*. 1996

² Ibid.

³ UNIFEM. *Women's Land and Property Rights*. September 9, 2010. (available at http://www.unifem.org/gender_issues/women_poverty_economics/land_property_rights.php)

⁴ Marssoud, Karshenas. *Agricultural and Economic Development in Sub-Saharan Africa and Asia*. 1999. Department of Economics, SOAS. Pg. 2.

⁵ Khan, M. 2001. *Rural Poverty in Developing Countries. Implications for Public Policy*. IMF (available at <http://www.imf.org/external/pubs/ft/issues/issues26/index.htm>)

⁶ International. *Facts About Illiteracy*. 2001. (available at <http://www.sil.org/literacy/litfacts.htm>)

⁷ Optimum Population Trust News Watch. 2010. (available at <http://www.optimumpopulation.org/blog/?p=2324>).

⁸ FAO Focus. *Women and Food Security, Access to Resources*. September 9th, 2010. (available at <http://www.fao.org/FOCUS/E/Women/Sustin-e.htm>)

⁹ Ibid. September 9th, 2010. (available at <http://www.fao.org/FOCUS/E/Women/Sustin-e.htm>)

¹⁰ World Bank Working Paper No. 73. *Gender, Time Use and Poverty in Sub-Saharan Africa*. 2006. (Available at http://siteresources.worldbank.org/INTAFRREGTOPGENDER/Resources/gender_time_use_pov.pdf)

To clearly understand the plight of women in agriculture, it helps to examine a simplified agricultural production chain. A simplified agricultural chain comprises the following:

(Production) - (Marketing) - (Consumption)

Production involves access to land, access to technology (improved seeds and fertilizers), farming practices like plowing, planting and harvesting. If one is not allowed to own land, and is not the primary decision-maker in the household, and she has no voice in the home, her gender-specific needs will not be met¹¹. Furthermore, because women do not have material assets, they have a more difficult time gaining access to credit for micro-financing. The ability to afford seed and fertilizer is a central component of technology adoption¹². In the production stage of the agricultural production chain, the key challenges facing women are access to land, to production technology and to energy (for land preparation and planting).

Agricultural Knowledge, Science and Technology for Development (IAASTD)¹⁷; Beijing Platform for Action adopted during the 4th World Conference on Women¹⁸ have all been identified as important contributors to the gender agenda in development. The World Bank and

gender equity then comes into play. In general ‘the institutions of the state have supported the men of property, rather than the poor and those without property’²⁸. When we look at women’s rights to land in Africa, traditionally most women are not allowed to own or inherit land²⁹. If land and access to water are vital to life, the rural poor will suffer even more so. As already stated, women make up the majority of the rural poor whose opportunities are already diminished. Clearly women are at a great disadvantage. Water and land for that matter are political³⁰. Also, since men are not involved with fetching water, they might not have as much relevant input as the women and girls whose responsibility it is³¹. If women are responsible for the majority of household chores, and the feeding of the family, it is imperative that provisions for providing clean water are made available and accessible.

It is important to work with leaders at the community level to illustrate how greater economic activity is of benefit to everyone. Gender divisions of labor and decision-making need to be examined. Women perform the majority of domestic chores and subsistence work, and yet they are not the household decision-maker, and their work goes unrecognized. This is detrimental because it is only women who can best articulate their own needs. If you take a population of working age individuals and only half of them contribute economically, you have another half that it is untapped. In general men are responsible for cash crops, and women are responsible for subsistence crops and domestic chores, which are not officially included in GDP measures. When earnings are small they are controlled by women, but when scaled to commercial levels men take over. This shows bias and inefficiency. However, a World Bank study shows that ‘if you give women the same inputs such as education or access to seeds and fertilizers’ it can increase yields by 22% (World Bank 2001)³².

How do national policies aid or hinder the process? Gender related special interest policies need to be implemented at the national and local level. African countries are heavily reliant on agriculture for their economies, labor force and subsistence³³. One way to look at how a government values a sector or issue is to look at government spending. How much of the total expenditure goes to the agricultural sector and how much of it is used for gender and development? While sex disaggregated data

women are more likely to plant trees for firewood for cooking³⁴. Research needs to be conducted on how best to meet both needs in a manner that is efficient and environmentally sound. The contribution of agricultural research is that it ‘contributes to growth and development’ and it ‘can contribute significantly to economic growth and development by increasing food availability and income’³⁵.

Demographic transitions such as the rural to urban migration, especially of young men in search of opportunities in urban areas, leave behind a majority of women and aged populations³⁶. One needs to consider their specific needs and limitations and include them in research. The questions can be as simple as the ability to physically handle a machine, the suitability or versatility of a technology, or the desire to grow new crops that reflect and are compatible with women’s preferences. The Kickstart *moneymaker* treadle pump provides a compelling example of why it is important to incorporate gender specifications in agricultural technology design. Approximately 60% of these pumps are managed by women because they are lighter than the standard pump, and the treadles are low, closer to the ground allowing women to work with ease. This design was modified in response to feedback from women³⁷.

Markets: Ease of entry points to markets for the African farmer is limited in general³⁸. Obtaining finance for planting necessities like seed and fertilizers is difficult. In order to get micro-financing, individuals need access to assets. As discussed above, women have limited or no rights to property³⁹. As a result, small farm holders face draconian challenges entering the market. Therefore, planting and harvesting crops often becomes unproductive. Also, the gender difference on growth preference of crops deserves closer scrutiny from the perspective of how it not only contributes to the local economy but to the sustenance of livelihoods, as well. Strategic gender interests in the form of legislation at the local, national and international level are a means to create gender equity in agriculture.

Conclusion:

African women in agriculture are disenfranchised. Although they are largely responsible for agricultural production and household management, their decision-making is subservient to men. Therefore compared to men, they lack access to the benefits of AKST, and to credit and markets for cash crops. African women farmers are unlikely to benefit from extension services and farm inputs, they are not likely to afford agricultural technologies, and women are also underrepresented in scientific and technical research institutions which may result in technical innovations that do not take account of women’s distinct perspective and farming needs. According to IAASTD, the purpose of the collaborative efforts of governments and NGOs is to reduce poverty and hunger, improve rural livelihoods and human health and achieve equitable, socially, environmentally and economically sustainable development⁴⁰. Since women make up the majority of the world’s poor, special attention to their plight would have a great impact on

³⁴ IAASTD pg 120.

³⁵ IAASTD pg 10.

³⁶

poverty reduction, inclusion into productive areas in society and health since they are the predominant health caretakers. Encouraging women's productive work can have the effect of increasing their visibility, respect and status in society. Finally, the essential role of women farmers warrants actions to enhance their decision-making, managerial, and technical capacity to authorize them to implement future improvements.