

**Title:**

**From traditional biomass to modern bioenergy: an essential transition for developing countries**

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Traditional biomass still plays an important role in the world. In 2012, 5.7 % of world's primary energy demand were from Traditional Biomass (TB). The TB dependence in developing countries for essential activities is a sad reality. In Asia (excepting China and India), Latin America, and Middle East the population relying on TB for cooking are 51%, 15% and 4%, respectively. On the other hand, in Africa the values are much higher, reaching 67% in whole continent and 80% in sub-Saharan region. This reality shows that: 2.7 billion people worldwide (730 million in sub-Saharan Africa) lack sufficient clean energy source for cooking. High poverty and undernourishment levels, and low electricity access and quality of life (Human Development Index – HDI) levels signal to be close correlations with TB dependence, where (except in South Africa), in all other African countries these indicators are very distant from the world average (Figure 1).

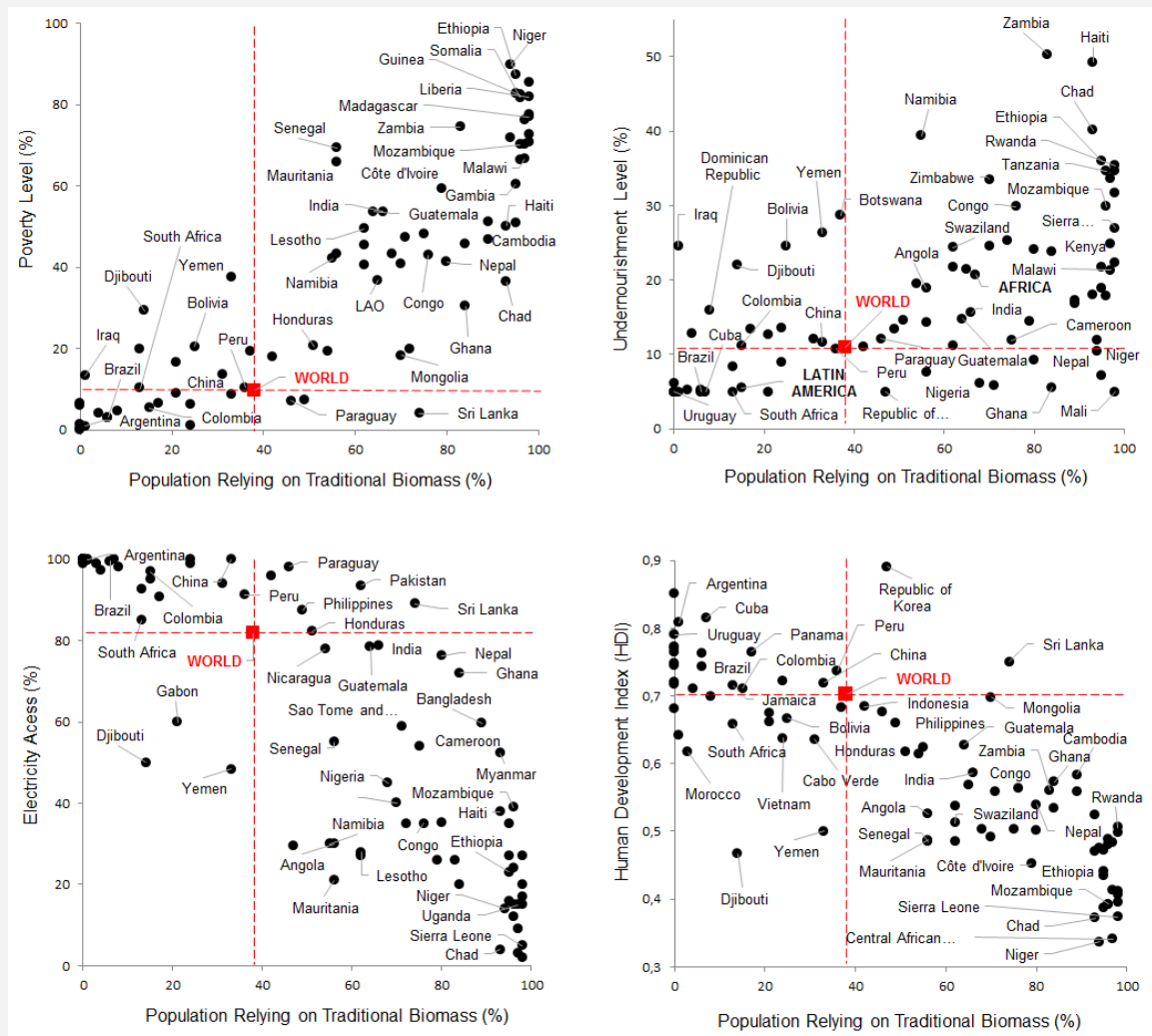


Figure 1. Would “underdevelopment and TB use/dependence” be a coincidence?

Although not unanimous in the scientific community, some cases have demonstrated that Modern Bioenergy (MB) seems to be the best options for less developed countries to maximize socio-economic

indicators, environmental benefits, and food & energy security. As opposed to TB, MB uses conventional to modern agricultural systems (often in large scale and based on a highly efficient energy crop) and highly efficient conversion technologies, both usually supported from a high level management. Some positive reasons why less developed countries need MB rather than TB are: 1. an adoption of professional agricultural practice can improve efficiency production and reduce costs; 2. modern production systems can optimize labor and frees women/children from semi-slave activities; 3. modern/advanced practices on agriculture and industrial conversions tends to minimize environmental impacts and restore biodiversity; and 4. modern energy access improvements, added to labors and income improvements, may attenuate poverty and undernourishment, promoting equity and development goals.

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