



## Best Practice: Green- growth, Policy, and Practice

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### **An Analysis of Green Growth (GG) Interventions in the Coffee Value Chain focusing on aBi Implementing Partners (IPs)**

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The Uganda Green Growth Development Strategy (UGGDS 2017/18 –2029/30) aims to ensure that the goals of the Uganda Vision 2040 and the NDPII 2015/16-2019/20 are attained in a sustainable manner. Although there is no global common definition of green growth, in Uganda’s context, green growth is defined as an inclusive low emissions economic growth process that emphasizes effective and efficient use of the country’s natural, human, and physical capital while ensuring that natural assets continue to provide for present and future generations. Empirical macroeconomic sector modelling indicates that full implementation of the UGGDS interventions (green growth scenario) will enhance national GDP by 10 percent beyond the business as usual (BAU) target, deliver an additional 4 million green jobs and reduce greenhouse gas emissions by 28 percent relative to the conventional growth pathway.

Cognizant that Uganda’s agriculture sector is highly dependent on natural capital and vulnerable to environmental and climate changes. The sector faces deteriorating natural resources and is experiencing increased seasonal changes that include higher temperatures, dry spells, and more erratic rainfall patterns. In alignment with the Rio markers on biodiversity, climate change mitigation and desertification were introduced in 1998, and climate change adaptation was applied from 2010 onwards. aBi is implementing the GG strategy to increase agriculture and agribusiness sector resilience to environmental and climate change shocks; minimize carbon footprint and waste through the promotion of efficient and sustainable utilization of natural resources and waste management, and green technology financing through the availability of long-term finance.

This paper focuses on green growth practices supported through aBi interventions in the coffee value chain at the farm and processing level.

## Increased agriculture and agribusiness sector resilience to environmental and climate change shocks;

aBi facilitated the application of Climate-Smart Agricultural (CSA) practices through the promotion of agroforestry<sup>1</sup> for coffee shade, wind brakes, fuelwood and other environmental services. Tree species mainly used are *Greveria*, *albezia* and *ficus* which serve several purposes including the provision of fuelwood and construction material, among others.

Ankole Coffee Producers Cooperatives Union (ACPCU) and Bukonzo Organic Cooperatives Union (BOCU) have enhanced farmers' capacities to utilize organic substances such as, animal waste, compost, mixtures/formulations of different plants, crops and animal substances. While in circumstances where organic manure sources are limited, especially among farmers without livestock, IPs and farmers have developed innovative ways of formulating manure to apply on their farms. For instance; ACPCU is promoting an organic manure formula – which mixes water from soaked rice, milk and sugar molasses in appropriate portions to make organic manure - over 300 young farmers in Western Uganda have been trained in this formulation and adoption is increasing.

- Bukonzo Organic Cooperative Union (BOCU) supports farmers to make compost manure from chicken residues, goat dung, cassava peelings, and waste from wet coffee pulping in the Rwenzori region.

Mulching<sup>2</sup> is yet another practice undertaken in mixed coffee-banana planting systems. The practice minimizes soil erosion and contributes to a reduction in soil temperature; henceforth, protecting the soil surface from the impact of falling rain, retaining soil moisture as well as increasing mineral nutrients and organic matter levels in the soil and production. The most common organic mulches used in coffee farms are cut grass, sorghum, maize trash, and coffee husks.

A handful of coffee farmers in the Rwenzori, Elgon, and Teso regions as well as steep slope areas of Kyabugimbi, Bushenyi, Kabale, and Ntungamo practice contour ploughing as a soil and water conservation measure to maximise gains. Contour trenches locally called "*Fanya juu and Fanya Chini*" are usually supported by planting grass commonly *elephant*, *Napier*, *Setaria*, and *Kikuyu grass* to stabilize them. Grass also supplements mulching and fodder for livestock.

Protection of fragile ecosystems promotes certification to ensure product quality and international niche market access. Organic, fair trade and rainforest certification are the main certification bodies working with aBi IPs and farmers. Certified IPs and farmers are required to preserve fragile ecosystems such as forests, rivers, and other natural resources. According to the Rainforest Alliance standard, farmers are restricted from carrying out any activities near the river/stream banks opening forests or wetlands for agricultural activities.

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<sup>1</sup> Agroforestry-refers for land-use systems and technologies where woody perennials (trees, shrubs, palms, bamboos, etc.) are deliberately used on the same land-management units as agricultural crops and/or animals, in some form of spatial arrangement or temporal sequence

<sup>2</sup> Mulching: Mulching is the application of materials on the surface of the soil.

Farmers in the Rwenzori region were trained to observe catchment guidelines as a move toward operationalizing observance of the 30metres for small water bodies and 100 meters for large water bodies.

**Green growth with less carbon footprint:**

aBi has supported IPs to adopt industrial solar systems and replace the use of generators to limit greenhouse gas emissions and also minimize costs from grid electricity. National Union of Coffee Agribusinesses and Farm Enterprises (NUCAFE) and UGACOF have established industrial solar power plants and demonstrated a significant shift towards efficient and clean coffee processing.

Green growth interventions enhance agricultural production, productivity, and profitability while maintaining the eco-system (sustainably). Climate-smart approaches such as mulching are common among coffee farmers to minimize soil erosion, reduce soil temperature, and protect the soil surface from the impact of falling rain.

**aBi GG intervention results at the coffee farmer level and process level:**

<b>Results: Coffee farmer level</b>	<b>Coffee process level</b>
<ul style="list-style-type: none"> <li>• 542,450 trees were planted on coffee farms.</li> <li>• ACPCU and KAWACOM are organic certified 45% of ACPCU coffee export is organic.</li> <li>• Over 300 youth trained in organic manure formulation for application in coffee</li> <li>• ACPCU constructed an underground water tank of over 100,000 liters to harvest rooftop water for supply to the entire coffee processing facility.</li> </ul>	<ul style="list-style-type: none"> <li>• National Union of Coffee Agribusinesses and Farm Enterprises (NUCAFE) and UGACOF established industrial solar power plants of 172Kwp<sup>3</sup> and 100kwp respectively with funding from aBi.</li> <li>• NUCAFE reduced its carbon emissions by 241.3 tons of CO<sub>2</sub> emissions annually.               <ul style="list-style-type: none"> <li>- Reduced energy costs by 56% from US\$. 5 million to US\$ 2.8 million per month.</li> </ul> </li> </ul>

**Lessons learned:**

Integration of GG practices in value chain development enhances environmental conservation efforts resulting in the minimization of climate change effects on agricultural production and productivity.

Promotion of green growth through innovative approaches such as the Green Challenge Fund as a way of scaling up green interventions across actors in the coffee and other value- chains is critical for the attainment of good climate change practices, social inclusion, and governance.

Strategic partnerships and linkages with the line ministries, development partners, the private sector, and agricultural service/product providers such as input suppliers, clean energy suppliers, and carbon markets service providers are a requisite for the attainment of sustainable coffee production.

**Green growth initiatives have since been faced with challenges that stem from, the scarcity of biomass required for mulching, limited awareness about the importance of**

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<sup>3</sup> Kwp: kWp is the peak power of a PV system or panel. Solar panel systems are given a rating in kilowatts peak (kWp) which is the rate at which they generate energy at peak performance

mulching, high cost of establishing CSA structures (Contours and trenches), coupled with high costs of energy-efficient machinery, and clean technologies such as solar for productive use.

**Recommendations:**

- i. Partnerships and collaboration with public and private entities toward a massive awareness and capacity building on climate-smart agriculture (CSA) and Good Agronomic Practices (GAPs) will enhance small holder farmer and agribusiness resilience to climate change. aBi is addressing climate concerns through the green challenge fund. launch of the green challenge fund is an These may include promotion of tree planting, stabilized contours, and regular maintenance to effectively regulate the speed of running water, among others.

Additionally, private provider partnerships be established with the solar industry association and Uganda Bureau of Standards to promote solar for productive use and regularly monitor solar products on the market and especially those used by farmers

- ii. Establish a rewards system to enhance scale-up and adoption of climate-smart agriculture for sustainable coffee production. Implementation of the reward system is best advanced on the attainment of agreed CSA milestones. The system could be piloted in the Mt. Elgon and Rwenzori regions.
- iii. Enhance access to quality solar technologies through the promotion of innovative business models such as *'pay as you go'*, guarantee facilities, and grants, in addition to direct purchases that end-users can afford.