

SESSION #6:

PRACTICES AND APPROACHES ON QUALITY EDUCATION TOWARDS ENVIRONMENT AND CLIMATE.

Case study from Uganda: **Bamboo for Good (B4G)** Grow, Train, Make, Sustain: Social Work Innovation in East Africa

Launched in September 2016, Bamboo for Good (B4G) reflects innovative partnerships among public and private institutions working together to mobilize bamboo resources to address critical social needs and serve as a catalyst for social empowerment, economic vitality, and environmental health. B4G is an initiative of Makerere University Department of Social Work and Social Administration (Uganda), Rwanda Bamboo organization, and Pacific Bamboo Resources (USA). The team leaders are all social work educators working in partnership with local institutions to promote social, economic and environmental justice.

B4G's mission is to provide leadership for uniting regional bamboo resources with institutional partnerships to create innovative bamboo industries and products, new workforce and economic development opportunities, and related educational programs, to address critical urban and rural quality-of-life conditions across East Africa. Bamboo for Good (B4G), combines traditional sustainable development intentions with strategic use of the valuable bamboo plant as a catalyst for innovation to address critical humanitarian and wildlife habitat issues in East Africa. B4G has for the past two years been working with communities neighbouring Bwindi-Mgahinga National Park in South Western Uganda to build their capacity for bamboo propagation and processing thereby enhancing livelihoods while at the same time protecting the environment. The Bwindi Mgahinga Conservation Area (BMCA) is a rainforest that is home to more than half of the Mountain Gorillas in the world. However, the human population around the area is about 331 people per square kilometre, a high density which exerts significant pressure on the park resources by neighbouring communities seeking their daily livelihoods. The communities are at the same time frequently exposed to danger and loss of life as they seek resources, including bamboo, from the conservation area. To reduce such pressure and promote harmonious co-existence between biodiversity, B4G embarked on building the capacity of the communities to utilise alternative methods and resources of propagating and managing bamboo growing outside the park. B4G does this through partnering with local community organisations including currently the Mgahinga Bamboo Conservation Programme (MBCP), Uganda Wildlife Authority, National Forestry Authority, district and sub-county administration and Change a Life. The programme has been supported by the International Bamboo and Rattan Organisation (INBAR).

The current and future strategy is to support (a) growing and harvesting bamboo to complement existing agriculture and agroforestry efforts among communities in fragile environments, such as those neighbouring conservation areas, (b) provision of skill training and workforce development to support sustainable cultivation and (c) new bamboo product creation and industries to meet critical needs, all aligned via (d) strategic planning to sustain programs and partner relationships for durable beneficial impacts.

Lombard, A. & Twikirize, J. (2018). Africa: Promoting community & environmental sustainability. In Jones, D. (Ed). *Global Agenda for Social Work and Social Development: Third Report: Promoting Community and Environmental Sustainability*. International Association of Schools of Social Work, International Council on Social Welfare, International Federation of Social Workers. Rheinfelden, Switzerland: International Federation of Social Workers.








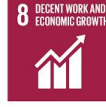


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APPLICATION OF DIFFERENT APPROACHES TO THE B4G CASE STUDY AND OVERLAP WITH THE SDGs











Envision infrastructure sustainability framework (By category)	Sustainability criteria (keywords)	Bamboo For Good (BFG) Envision-based Sustainability Assessment	Areas of focus & synergies International Federation of Social Workers / International Science Council (ISC/ICSU)	Relevance to SDGs (how project helps achieve SDGs)
<p>Quality of Life (wellbeing, mobility, community)</p> 	<ul style="list-style-type: none"> ● Job creation, ● enhance health & safety, ● quality of life improvements. ● Construction safety, ● minimize noise & vibration, ● light pollution, ● construction impacts, ● equity & social justice, ● preserve historic resources, ● enhance views & local character, ● enhance public space 	<p>a) Quality of life improvements. BFG is building the capacity of communities neighbouring Bwindi-Mgahinga National Park (BMNP) in South Western Uganda for bamboo propagation and processing thereby enhancing livelihoods while at the same time protecting the environment. The BMNP contains a rainforest, home to more than half of the Mountain Gorillas in the world, and also is the source of livelihood of neighboring communities. The human population around the area is about 331 people per km², which is a high density that pressures the park resources.</p> <p>b) Enhances health and safety. The community no longer needs to rely on getting bamboo from the conservation area, which was harmful to the habitat of the gorillas and the overall ecosystem.</p> <p>c) Advance equity and social justice. BFG works with partner community-based organizations, using a train the trainer model, to grow, train, make and sustain. Bamboo is grown outside of the national park and when it is mature it is used to create handmade products to sell in addition to the traditional uses of the bamboo.</p> <p>c) Preserves cultural knowledge and local character. BFG capacity building is using indigenous knowledge from the community using Arundinaria bamboo, a well known local resource. The project also helps conserve the local character of BMNP, recognized as a World Heritage Site for its biodiversity and Mountain Gorillas population.</p>	<p>Synergy via embracing environmental justice as encompassing the social, economic, political and environment-empowering marginalized populations and ensuring inclusiveness and equality in climate change education, preparation and mitigation through sustainable infrastructure and educating the new generation on climate change for the purpose of ensuring quality of life.</p>	     
<p>Leadership (collaboration, planning, economy)</p> 	<ul style="list-style-type: none"> ● Stakeholder involvement, ● plan for sustainable communities, ● plan for long term, ● stimulate economic prosperity, 	<p>a) Provision of skill & training on sustainable cultivation. Growing and harvesting bamboo to complement existing agriculture and agroforestry efforts among communities in fragile environments</p> <p>b) Workforce development. BFG reflects innovative partnerships among public and private institutions working together to mobilize bamboo</p>	<p>Synergy via Collaboration to educate the next generation around climate change, planning and building sustainable infrastructure projects that can create opportunities for decent</p>	

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	<ul style="list-style-type: none"> develop local skills and leadership by using train-the-trainer model. 	<p>resources to address critical social needs and serve as a catalyst for social empowerment, economic vitality, and environmental health. BFG workforce development includes building capacity in bamboo nursery establishment, propagation techniques, and plantation management for bamboo growing.</p> <p>c) BFG provides alternative livelihoods, which promote economic prosperity and community sustainability while at the same time preserving the physical environment essential for wildlife and the whole ecosystem.</p> <p>d) Stakeholder involvement and community buy in. BFG is an initiative of Makerere University Department of Social Work and Social Administration (Uganda), Rwanda Bamboo organization, and Pacific Bamboo Resources (USA). The team leaders are all Social Work educators working in partnership with local institutions to promote social, economic and environmental justice. BFG partners with local community organisations: the Mgahinga Bamboo Conservation Programme, Uganda Wildlife Authority, National Forestry Authority, district and sub-county administration and Change a Life.</p> <p>e) Planning sustainable communities and income based on bamboo cultivation. Bamboo is a fast growing plant that reaches maturity in 60 to 90 days, providing high biomass for multiple uses (e.g. as building material, craft, agricultural material as stakes for climbing crops and firewood for local source of energy). The Arundinaria bamboo is a predominant local plant and very important resource for the communities bordering the MGNP for its multiple uses.</p>	<p>work and economic growth for marginalized populations. Synergy also occurs through sharing best practices within our respective organizations.</p>	     
<p>Resource Allocation (materials, energy, water)</p> 	<ul style="list-style-type: none"> Sustainable procurement practices, recycled materials, reduce waste, reduce energy consumption, renewable energy, preserve water resources, reduce water consumption 	<p>a) Sustainable procurement practices in the use and cultivation of bamboo. With bamboo cultivation outside the conservation area, there is less extraction of raw materials from the park.</p> <p>b) New bamboo sustainable product creation & industries. It helps meet communities' critical needs, which B4G aligns through strategic planning to sustain programs and partner relationships for durable beneficial impacts.</p> <p>c) Bamboo products help reduce waste. The community is able to use 100% of the bamboo resource for food, products, and industries. Bamboo is an organic product, which reduces</p>	<p>Synergy via focus on resource allocation in educating the next generation on climate change, educating social workers and marginalized communities in benefits of resource allocation in social and economic development through sharing best practices</p>	  

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		<p>waste and minimizes the use of other polluting materials (i.e. plastic containers)</p> <p>d) Helps preserves water resources. Bamboo preventing erosion and protecting water replenishment areas inside the BMNP conservation area.</p> <p>Areas for improvement: -Integrate renewable energy generation to support operations such as bamboo propagation, processing, products creation.</p> <p>-Help preserve water sources by incorporating a water reuse strategy i.e. watering bamboo with recycled greywater, monitoring water use,</p>	and through sustainable infrastructure projects that integrate renewable energy generation to support operations.	
<p>Natural World (siting, conservation, ecology)</p> 	<ul style="list-style-type: none"> ● Preserve sites of high ecological value, ● provide buffers, ● preserve undeveloped land, ● reclaim brownfields, ● manage stormwater, ● reduce pesticide/fertilizer, enhance habitats, ● enhance wetlands/water bodies, ● maintain floodplain functions, ● control invasive species, ● protect soil health 	<p>a) Preserve sites of high ecological value. BFG helps reduce resource extraction pressure on one of the most biodiverse areas in the world, the Bwindi-Mgahinga National Park. The propagation of fast growing bamboo in the communities helps protect biodiversity. The rainforest in the park is the habitat for the Mountain Gorillas, a keystone species listed as endangered in the IUCN Red List,¹ and 120 species of mammals, 346 bird species, 310 butterfly species, 163 tree species, 104 fern species, and 27 frogs.</p> <p>b) Bamboo cultivated areas help protect water replenishment areas through forest conservation. Bamboo cultivated areas in the communities help reduce resource extraction in the conservation areas, which helps preserve the key ecosystem benefits from the forest. The key ecosystem goods and services that the conservation areas provide include water catchment protection, as well as tourism, medicinal, and cultural values.</p> <p>c) Bamboo phytoremediation helps reclaim brownfields. The bamboo cultivated areas help in cleaning up cadmium found in soil from mining activity in the communities. The bamboo uses rhizomes and high biomass to eliminate pollutants from soil, which help remediate brownfields from mining.</p> <p>d) Bamboo cultivated areas help manage stormwater. The BMNP conservation areas provide water catchment protection which helps ensure water availability downstream from the</p>	Protecting and preserving the natural world through engagement of local community in economic development projects that are sustainable for the community and the environment.	   

¹ International Union for Conservation of Nature, Red List, accessed on June 2019, <https://www.iucnredlist.org/species/39999/17989719>

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		<p>park.</p> <p>e) Bamboo protects soil health. BFG helps minimize erosion with bamboo propagation, which protects the soils. In addition, the bamboo rhizomes help in plant nourishment and enhance the activity in the soil, improving its health.</p>		
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<p>Climate and Resilience (emissions, resilience)</p> 	<ul style="list-style-type: none"> ● Reduce net embodied carbon, ● reduce GHG emissions, ● reduce air pollutant emissions, ● avoid unsuitable development, ● assess climate change vulnerability, ● evaluate risk & resilience, ● establish resilience goals & strategies, ● maximize resilience, improve infrastructure integration 	<p>a) Bamboo cultivation reduces air pollutant emissions by avoided deforestation in the BMNP conservation area. BFG helps conserve the forest in the park, as well as contributes to clean air as the bamboo cultivation area helps to reduce air pollutant emissions in the community.</p> <p>b) Bamboo cultivation reduces GHG emissions by avoided deforestation and carbon sequestration. BFG helps communities to sequester carbon through indirect protection of the primeval forest in BMNP and through direct carbon sequestration from the fast growing bamboo biomass in the cultivation areas, and bamboo products.</p> <p>c) BFG established resilience strategies for the communities. BFG uses bamboo as a valuable catalyst for social empowerment, economic vitality, and environmental health, which helps minimize climate change impacts in the communities. BFG project strategy helps to reduce pressure on the fragile BMNP ecosystem while it improves relationships between communities and park management, and conserving biodiversity.</p>	<p>a) Help the next generation to understand the science of climate change and its short-term and long-term impacts and its non-linearity. The increase in the climate literacy through pedagogical interventions would help them to identify innovative and sustainable solutions to their local problems using global science.</p> <p>b) Make the next generation aware about the resilience to and mitigation of a problem that may have its origin elsewhere and today's solution may not hold good tomorrow.</p>	  
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REFERENCES:

- IASSW, ICSW, IFSW (2018) 'Global Agenda for Social Work and Social Development: Third Report. Promoting Community and Environmental Sustainability'. (Ed. David N Jones), IFSW, Rheinfelden, Switzerland, p. 70 -72, accessed in June 2019, <https://www.iassw-aiets.org/wp-content/uploads/2018/07/Global-Agenda-3rd-Report-PDF.pdf>
- Institute of Sustainable Infrastructure, Envision Sustainable Infrastructure Framework Version 3, 2018, accessed in June 2019, <https://sustainableinfrastructure.org/envision-version-3-downloadable/>
- Pacific Bamboo Resources, Bamboo For Good, accessed in June 2019, <https://pacificbamboo.org/bamboo-for-good/>
- USAID, An Overview of Climate Change and Biodiversity in Uganda, 2014, accessed in June 2019, https://www.climatelinks.org/sites/default/files/asset/document/Uganda%2520CC%2520and%2520Biodiversity%2520Overview_CLEARED_0.pdf
- UN, About the Sustainable Development Goals, accessed in June 2019, <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>