

## **Reconciling Sustainable Biofuel Production and Inclusive Energy Transition: Priorities for G20 Global Biofuel Alliance (GBA)**

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The Global Biofuels Alliance (GBA) established in 2030 aims to support the worldwide development and deployment of sustainable biofuels, by functioning as a repository of information, facilitating capacity building across the value chain, and enabling technological advancement. Sustainable biofuel production plays an important role in reducing carbon emissions and under the Net Zero economy scenario, the demand for biofuel production should triple from 2023 to 2050. However, to achieve this goal and address the multilevel sustainability issues, the G20 needs to take comprehensive actions at multiple fronts with supporting metrics.

### **1. Building a Common Taxonomy and Transparent Sustainability Certification Scheme**

*(Metric: Adoption Rate by Member Countries)*

Inconsistent terminology around biofuels and feedstocks creates confusion and hinders effective communication within the alliance. Hence, the Energy Transition, Agricultural, and Environmental Working Groups of G20 should work jointly.

- **Develop a Biofuel Glossary:** Establish a publicly available online glossary defining key terms related to biofuel policies, feedstocks, sustainability criteria for internationally traded biofuels and their derivatives, and standardization of certification schemes.
- **Standardize Reporting Metrics:** Create a standardized framework for reporting biofuel production data. This includes feedstock type, production methods, and key performance indicators of sustainability (e.g., land-use change, greenhouse gas emissions, water footprint).

A clear communication based on the agreed glossary would foster collaboration among the GBA members to avoid the land vs. water vs. food security trade-offs and accelerate investment within the biofuel sector.

### **2. A Synergistic Approach to Food Security and Bioenergy**

*(Metric: Percentage of Biofuel Production from Non-Food Feedstocks)*

Several studies indicate large-scale biofuel production could compete with food production, jeopardizing food security at the local, regional, and national levels. Hence, it is recommended for GBA to formulate a task force that investigates setting priorities for:

- **Promote Sustainable Feedstock Options:** Advocate for the use of non-food feedstocks like:
  - **Agricultural waste:** Developing a circular supply chain for crop straws, stalks, and husks left over from harvesting food crops.
  - **Used cooking oil (UCO):** Enhanced logistics for collecting and repurposing for biodiesel production and use by households and small businesses.
  - **Dedicated energy crops:** Intensification of fast-growing, non-food crops like miscanthus cultivated on marginal lands and securing resilient supply chains involving smallholder farmers.
- **Support advanced Technologies:** Invest in research and development of second-generation biofuels utilizing non-food biomass, further reducing competition with food production.
- **Set Reasonable Target Settings:** Establish targets for increasing the percentage of biofuel production derived from non-food feedstocks. These targets should be achievable and pragmatic, promoting a gradual shift over a period taking into consideration the trade-offs that exist at different levels.

### **3. Technological Innovations and Capacity Building**

*(Metric: Number of Technology Transfer Agreements & Training Participants)*

The main challenges for the countries in the global south are limited access to technology and infrastructure hinders the development of a sustainable biofuel sector in many countries, particularly rural regions. Hence, it is recommended for GBA to act as a platform for research and development, knowledge sharing, and collaboration on biofuel technologies and technology transfer between developed and developing countries. This could involve establishing research partnerships between institutions organizing technology showcases and demonstration projects in rural areas, and supporting joint ventures for technology transfer between companies and rural entrepreneurs.

Further GBA should form a task force to review and strengthen policy systems, and institutional capacity for promoting investments in quality infrastructure as a support for new sustainability initiatives for feedstock collection, transportation, and processing, particularly in rural areas. This review could include studying the feasibility of establishing collection centers for agricultural waste, investing in efficient transportation networks for biomass, and supporting the development of decentralized biorefineries closer to feedstock sources.

Organizing targeted capacity-building and training programs for female farmers and young entrepreneurs could include sustainable biofuel production practices and technologies and cover topics like feedstock selection and cultivation techniques for dedicated energy crops, Biomass collection, and pre-processing methods, and Biofuel production technologies and their food security implications.

### **4. Unlocking Investment with the Promotion of Stable Prices for Biofuel**

*(Metric: Number of Member Countries with Blending Mandates & Harmonized Standards)*

Unstable biofuel prices and inconsistent regulations create uncertainty for investors and hinder biofuel market development in emerging economies of G20. It is recommended that GBA encourage member countries and international organizations to Develop Long-Term Biofuel Blending Mandates with a mandate to Implement clear and predictable blending mandates for biofuels in transportation fuels (e.g., mandating a minimum percentage of biofuels to be blended with gasoline or diesel). This will provide market stability and incentivize biofuel production. Subsequently, GBA advocates for the adoption of harmonized international standards for biofuel production and certification across member countries. This ensures quality and sustainability across markets, reducing trade barriers. Parallel to meeting the targets, member countries could consider tax breaks or subsidies for small-scale biofuel producers, particularly in the initial stages of market development. These incentives when accompanied by other policy reforms such as the removal of pervasive fossil fuel subsidies can make biofuels more competitive with fossil fuels and encourage investment in the sector. Blending mandates provide a guaranteed market for biofuels but not the price of the fuels. Harmonized standards ensure consumer confidence and facilitate trade, while tax incentives make biofuels more attractive to producers and consumers.

## **5. Engaging Carbon Markets as a way for financing a Sustainable Biofuel Future**

*(Metric: Amount of Biofuel Project Funding Leveraged from Carbon Markets)*

Financing the development of a sustainable biofuel sector harnessing the capital markets remains a significant challenge for emerging economies in G20. Hence, it is recommended for GBA to work with the Environmental Working Group and Sherpa Tracks to establish a framework for biofuel carbon credits that recognize the greenhouse gas emission reduction benefits of sustainable biofuels. These biofuel-derived carbon credits should be integrated with existing carbon trading programs which will allow biofuel producers to participate in national and international carbon trading schemes and sell biofuel carbon credits to large companies in hard-to-abate sectors to offset their emissions.

GBA should also explore International Collaboration for Carbon Finance Initiatives by examining the pathways for partnership with international financial institutions such as the World Bank, the Asian Development Bank, African Development Bank, the Global Environmental Facility, and developed nations to create dedicated funding mechanisms such as Japanese JCM for sustainable biofuel development in developing countries. Biofuel carbon credits create a new revenue stream for producers of sustainable biofuel and carbon trading schemes incentivize private investment in sustainable biofuels. On the other hand, GBA needs strong political will and effective diplomacy to bring key players to the table and foster international cooperation. Additionally, ensuring equitable benefits for all participants, particularly developing countries, will be crucial for harnessing carbon market potential.