

Ethanol-based Clean Cooking

Global landscape, Regulatory considerations,
and Private sector engagement

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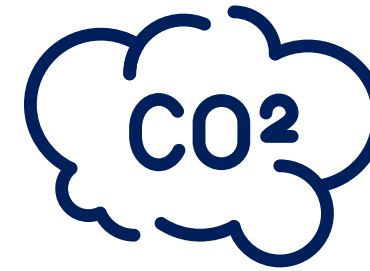
A Global Challenge

2 BILLION

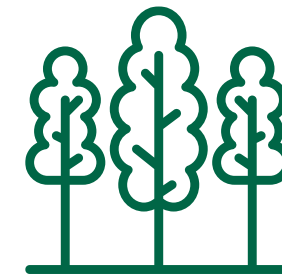
people without access to modern
energy cooking services

3.2 MILLION

deaths related to
household air pollution



Increased GHG
Emissions



Forest and Soil
Degradation

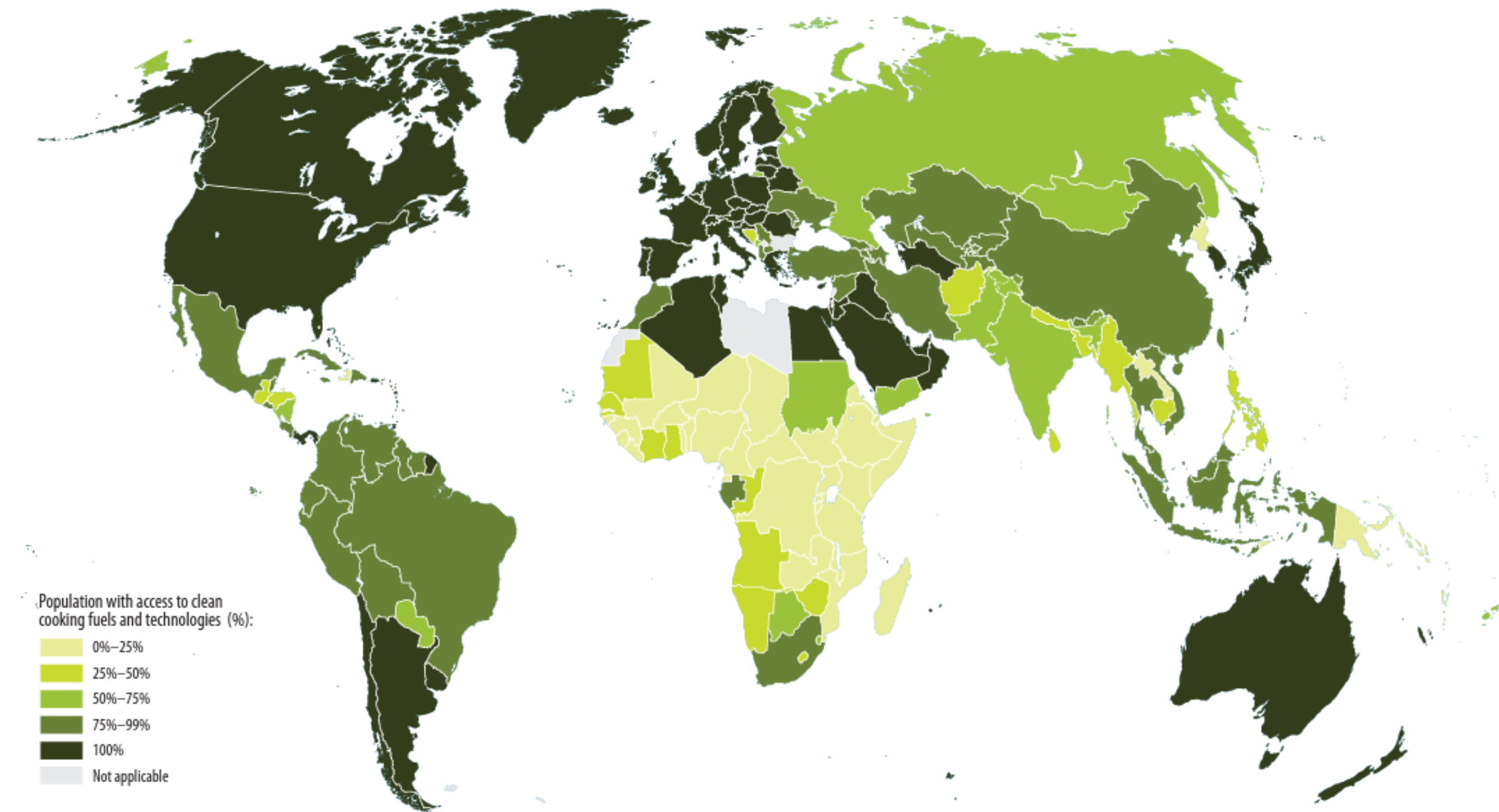


High Household
Expenditure for Energy



Gender and
Time Burden

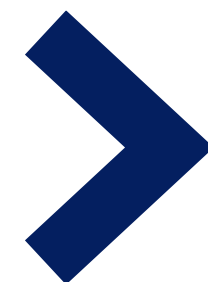
FIGURE ES.4 • Share of population with access to clean cooking fuels and technologies, 2021 (percent)



IEA (2022), Africa Energy Outlook 2022, IEA, Paris <https://www.iea.org/reports/africa-energy-outlook-2022>, License: CC BY 4.0
<https://www.fao.org/3/x2740E/x2740e01.htm#TopOfPage> |

970
MILLION
people still
without
options

A Global
View



Access to clean cooking
Global

71%

Access to clean cooking
Sub-Saharan Africa

17%



Global Options

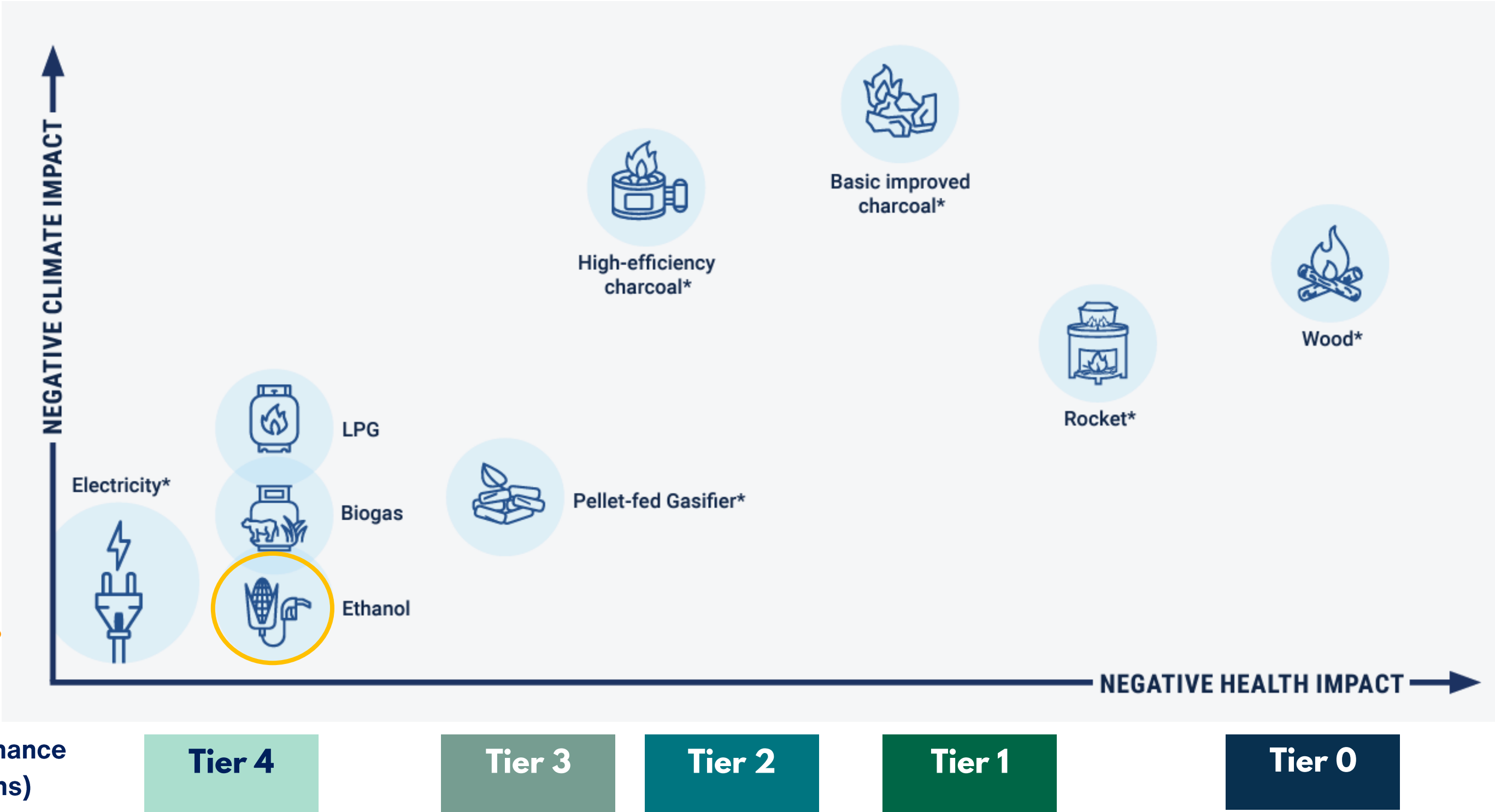


ISO EVALUATION CRITERIA

ISO 19869:2019

- 1 Efficiency/Fuel Use
- 2 Total Emissions
- 3 Indoor Emissions
- 4 Safety

Bioethanol stoves get a Tier 4 rating using the ISO standard





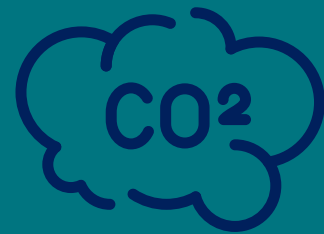
Restore health



Expand markets



Create jobs



**Reduce carbon
emissions**



Empower women



**Grow global
production**



**Improve
livelihoods**



**Strengthen
agriculture**



**Protect the
environment**



**National
Security**

The Bioethanol Solution



Agriculture + Energy



Emerging Market Factors



Regulatory Frameworks

- Standards, Tariffs on fuel/tooling, NDCs, Mandates, Taxation (VAT, excise duties, etc.)



Supply

- Imports as well as domestic content expansion, feedstock considerations



Infrastructure

- Port considerations, storage, ethanol plants, distribution, fuel points



Investment

- Port considerations, storage, ethanol plants



Pricing & Economics

- Competitive with other fuels (parity), accessible to entire population, refueling options



Consumer Education

- Stove and fuel utilization, safety considerations, economic and health impacts



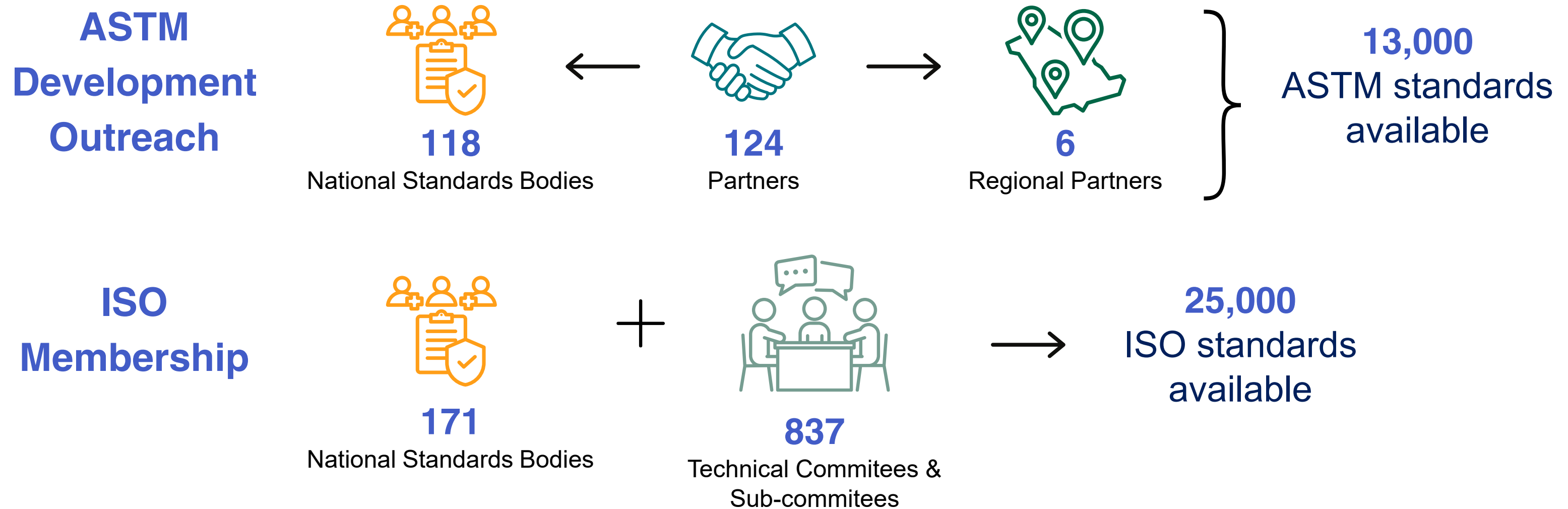
Logistics

- Imports for stoves and fuel, distribution

Standards Landscape



- Standards are used everywhere in our daily lives; they are a **set of established requirements, specifications, guidelines or characteristics that provide a common language** to ensure that materials, products, processes and services are fit for purpose



- Both ASTM and ISO are compliant with the World Trade Organization (WTO) Technical Barriers to Trade (TBT) Committee Decision on the Development of International Standards, Guides and Recommendations**

Bioethanol Standards



Critical standards

Denatured Ethanol for Use as a Cooking and Appliance Fuel (ASTM E3050-22)	Enabling recognition of ethanol as a cooking fuel (vs. drinkable alcohol) and providing specifications for blending the fuel (e.g., dye addition, water content) is critical to providing an adequate fiscal environment to enable ethanol for cooking.
Test protocols for institutional cookstoves (ISO 5714:2023)	Provide testing methods to evaluate institutional cookstoves' energy performance, emissions, safety, and durability for high-quality institutional cookstoves.
Field testing methods for cookstoves (ISO 19869:2019)	Provide field testing methods to evaluate cooking system performance in real-world conditions (guidance for measurements of household air pollution and personal exposure to PM2.5 and CO) to ensure consumer safety and quality
Harmonized Laboratory Test Protocols (ISO 19867-1:2018)	Provides standard test protocols to establish international comparability in the measurement of cookstove emissions and performance, safety and durability, ensuring that modern and efficient ethanol cookstoves are offered to consumers.

Importance of harmonization

- Prioritizes consumer safety throughout the ethanol cooking supply chain
- Promotes international trade by reducing potential barriers to market entry
- Boosts consumer confidence in products/services across regions by ensuring consistent and quality products in the market
- Provides the regulatory framework to enable private investments
- Makes it easier for local, national and global commerce to conform to applicable standards
- Allows for streamlined supply chains and operations, which enhance a nation's energy sector competitiveness globally



Moving Forward

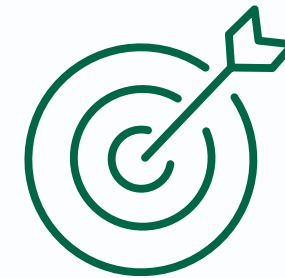
Accelerating standards development globally unlocks bioethanol for cooking potential



National and Regional Standards

01

Use existing standards to accelerate adoption in other regions; assess existing standards or policies and adapt when necessary



Standards Adoption in Focus Countries

02

Public-Private partnerships can help foster dialogue, implement regulation, and determine resource allocation for bioethanol development



Broad Harmonization of Standards

03

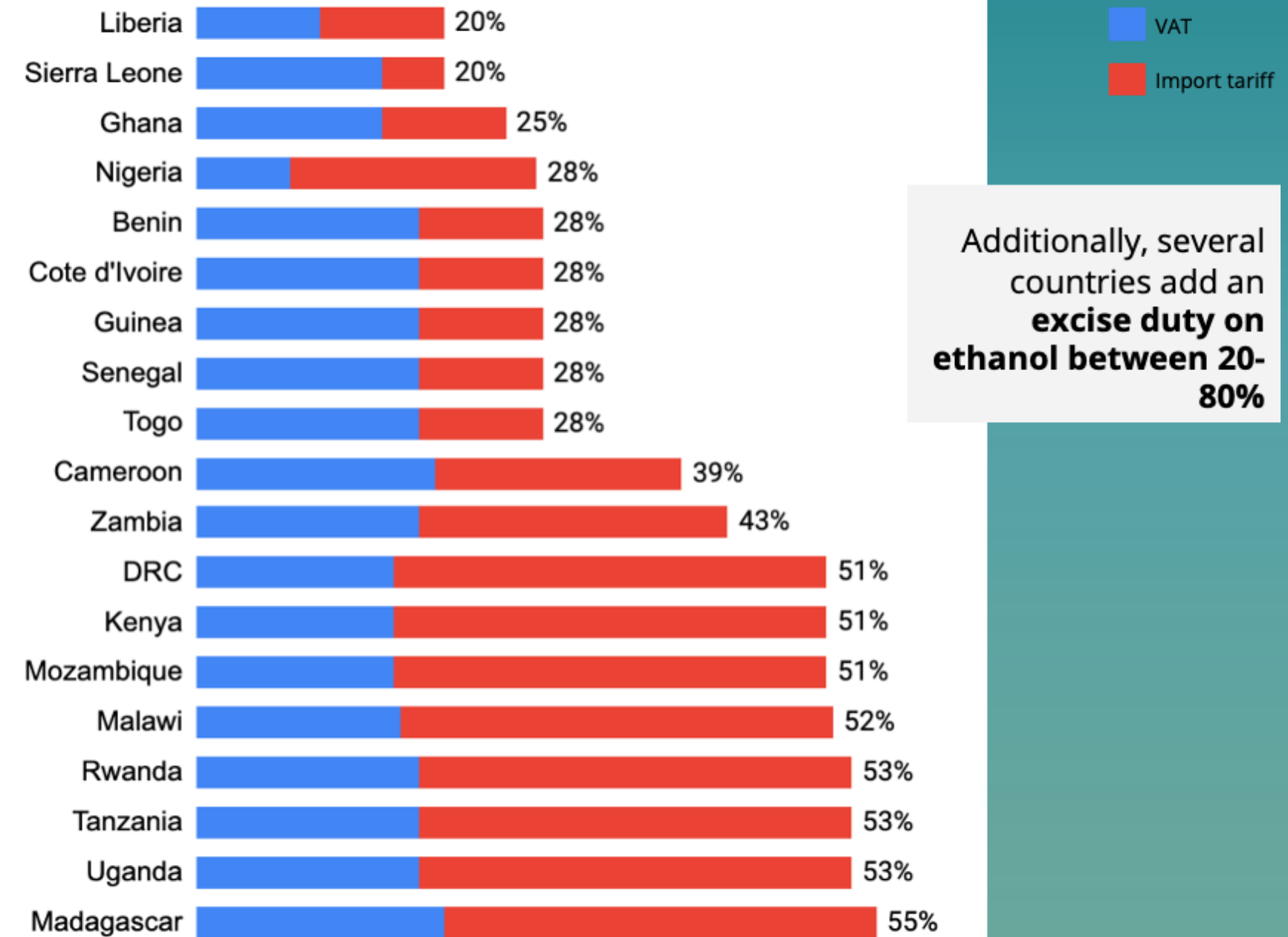
Cost reductions related to compliance, consumer confidence, and improved interoperability across borders

Policy Environment

- Policy environment around the world is in its infancy and needs active participants from government and private sector in order to expand industry opportunities
- Fiscal policy needs to evolve for bioethanol which face tariffs of often 20-55% compared to the rest of the modern fuels
- Most countries have not yet developed and adopted standards and regulations for ethanol cooking
- Ethanol cooking projects still face uncertain local carbon credits regulation



Bioethanol still face substantial import tariffs, VAT and excise duty



Duty and tax burden on imported denatured Bio-ethanol

Subset of 19 SSA nations, reflecting duties + taxes, %

Source: KOKO Networks review of National Policy, January 2024

Policy Considerations



Harmonization of Standards; Appropriate HS Codes

Work with organizations such as ASTM/ISO to introduce standards to NSB's; WTO on specific bioethanol cooking fuel HS Codes.

Formation of inter-ministerial committees specific to clean cooking

Engage with government entities to educate and identify appropriate representatives; encourage regular committee discussions.

Tax incentives or concessional financing for feedstock producers and production facilities to help meet decarbonization goals

Foster Public-Private dialogue for communication around needs and investment opportunities; connect with external investment or technical assistance.

Establishment of supportive clean fuels policy and strategies

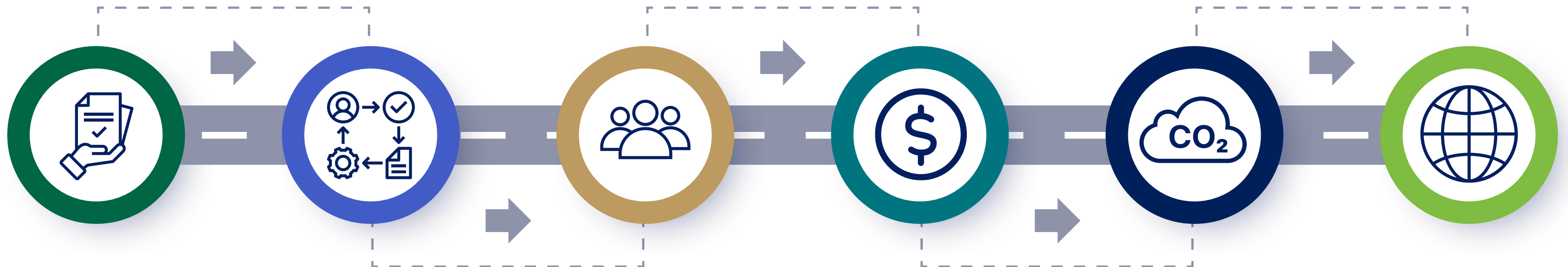
Assess current policies and NDC targets; provide guidance on broader clean cooking strategies, with practical ways to include bioethanol programs.

Removal/reduction of tariff and duties on imports - VAT on bioethanol fuel and stove technologies

Assess economic opportunities created through providing favorable tax rates and policies and develop guidance documents.

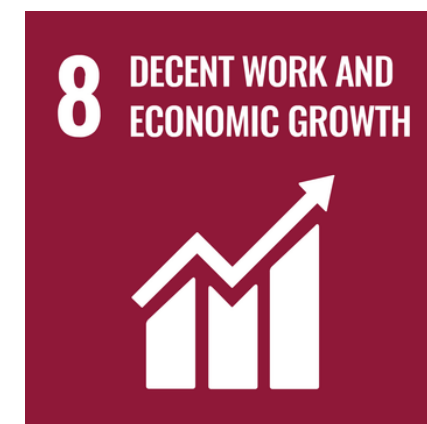
Engagement on a global level to mobilize investment and raise visibility

Ensure representation at multilateral/national events to educate, inform, and advise on policy, standards, and development



A Clean Transition

**CLEAN TECHNOLOGY AND FUELS FOR HOUSEHOLD ENERGY
HELP MEET MULTIPLE SUSTAINABLE DEVELOPMENT GOALS**



Only 39 of 128 countries lacking universal access to clean cooking have set targets

Less than half have a goal of universal access by 2030

Countries with Nationally Determined Contributions have a large opportunity to leverage clean cooking technologies



Public Private Partnerships



Stakeholder Dialogue

- **Physical forums for multi-stakeholder dialogue** to build capacity, develop relationships, and support engagement around biofuels
- Foster enabling environments through **standards and policy dialogue and adoption**
- **Implement** applicable regulations, and determine support and resources needed to develop bioethanol markets



Outcomes

- **Governments and NSB's equipped** to develop biofuels policy, regulation, and pricing strategies
- Local **private sector informed** on market opportunities and international partners
- **Agricultural expansion and green job** creation opportunities (pilots or feasibility studies)
- **Internationally recognized standards** ensure quality control and improved trade opportunities
- **Broadened networks** allow for continued knowledge exchange, access to resources, and **market building opportunities**



USGBC Engagement



EAC Symposium - Kenya

- Stakeholder engagement symposium across the clean cooking space in East Africa
- Curated capacity building for 3 clean cooking businesses

Standards workshops

- Six virtual and physical workshops in Ghana, Kenya, Mozambique
- Sectors represented included
 - 68 government | 111 private sector | 130 NGO/multilateral

High Level Roundtables

- ABLC and NY Climate Week (UNGA)

Research

- Climate and Health Impacts – Berkeley Air

Coalition Building

- Africa Bioethanol Association



Thank You



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