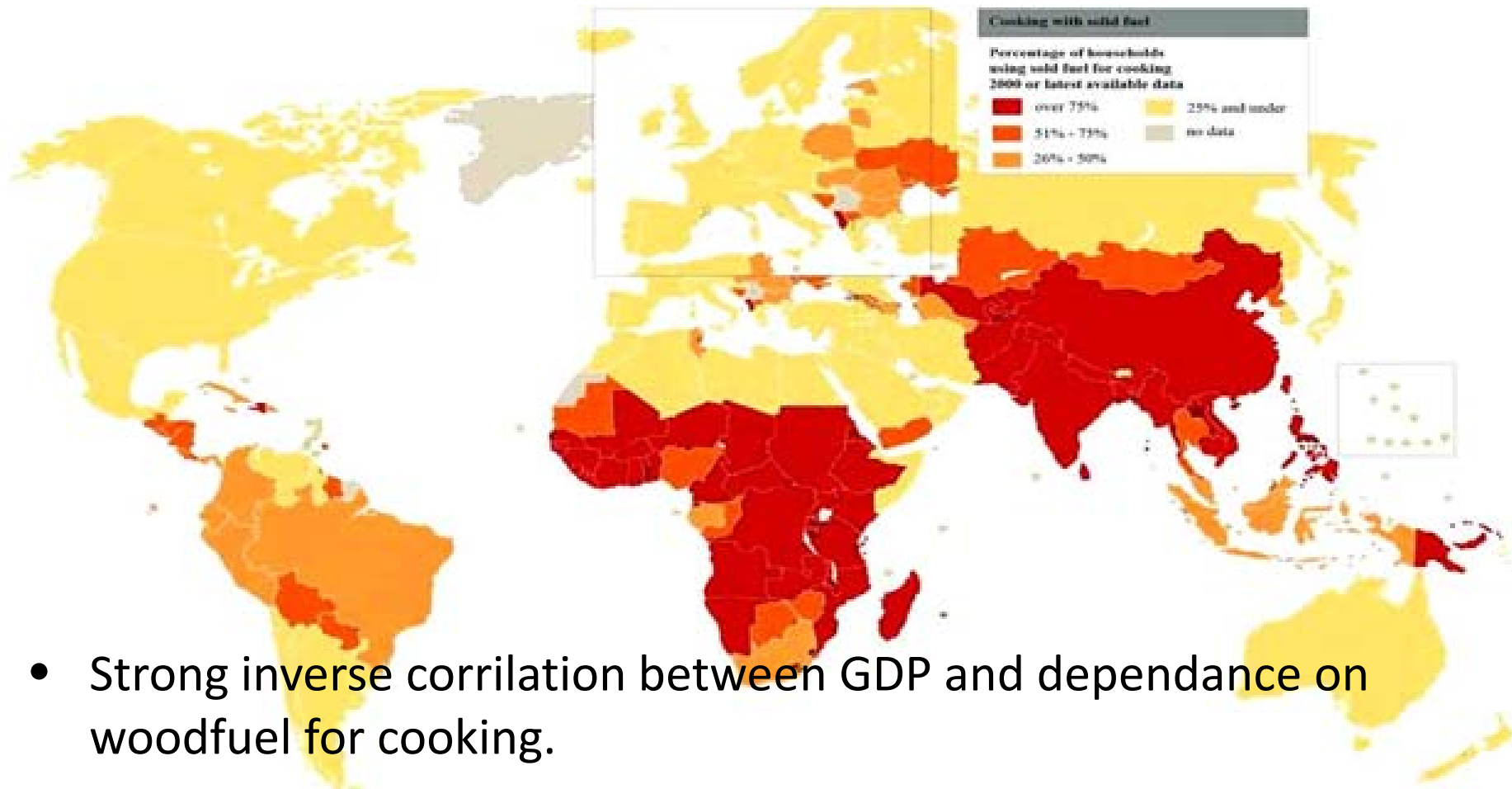


NATIONAL COOKING ENERGY STRATEGIES - LESSONS FROM GHANA



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WACCA Workshop April,
2013 - Ouagadougou

Energy for cooking accounts for a high proportion of primary energy used in developing countries



- Strong inverse correlation between GDP and dependance on woodfuel for cooking.
- 2.7 billion people still rely on woodfuels for cooking and heating in the 21st Century

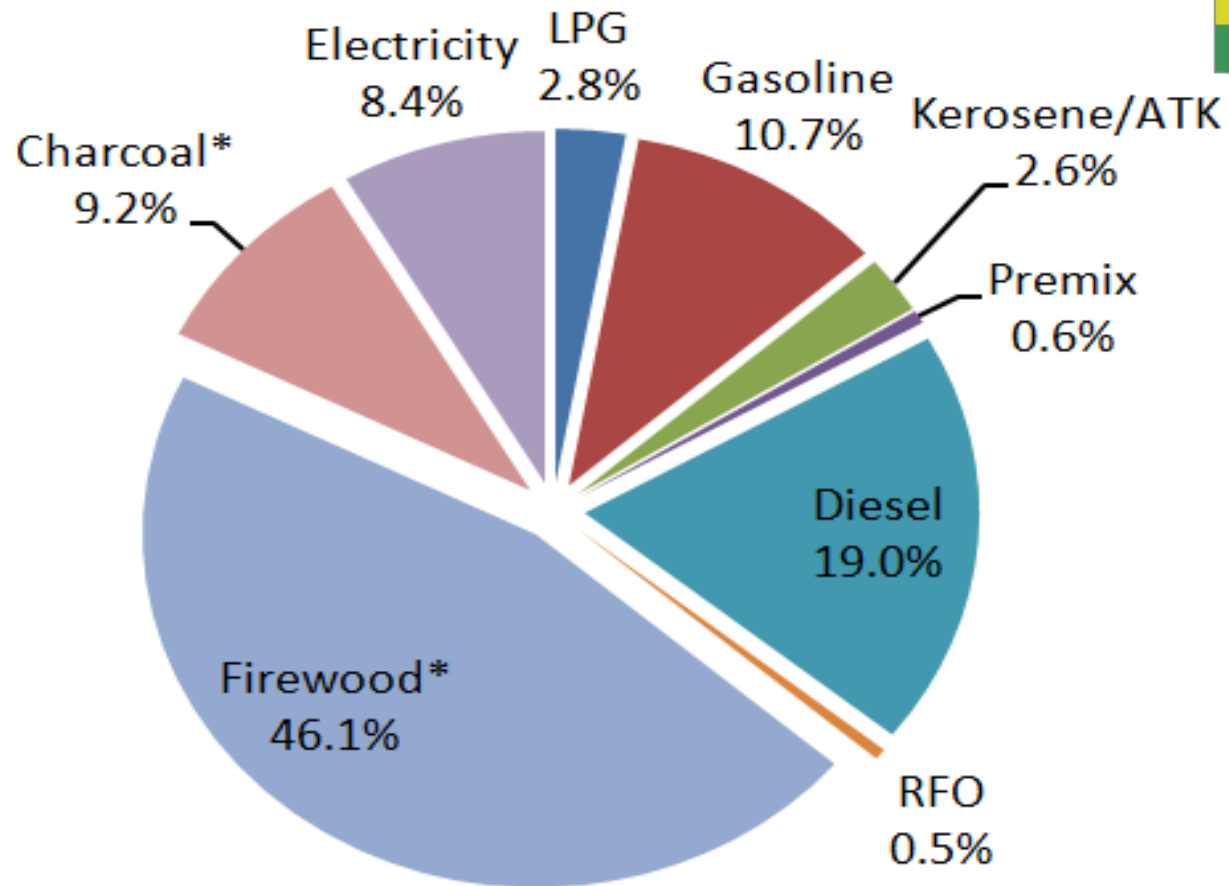
Source: Torres-Duque et al., 2008

ECOWAS WHITE PAPER ON ENERGY ACCESS

- Ghana is a signatory to ECOWAS White Paper for Regional Policy on Access to Energy Services - Jan 2006
- Policy requires among other to achieve:
 - 100% access to modern cooking facility - (improved stoves, kerosene or LPG) by 2015
 - At least 30million (9.2%) of the population use LPG cooking devices.
- Rational:
 - Reduce indoor air pollution from wood smoke,
 - Reduce deforestation
 - Improve living standard of women and children

TO WHAT EXTENT IS ECOWAS ACHIEVING THIS TARGET?

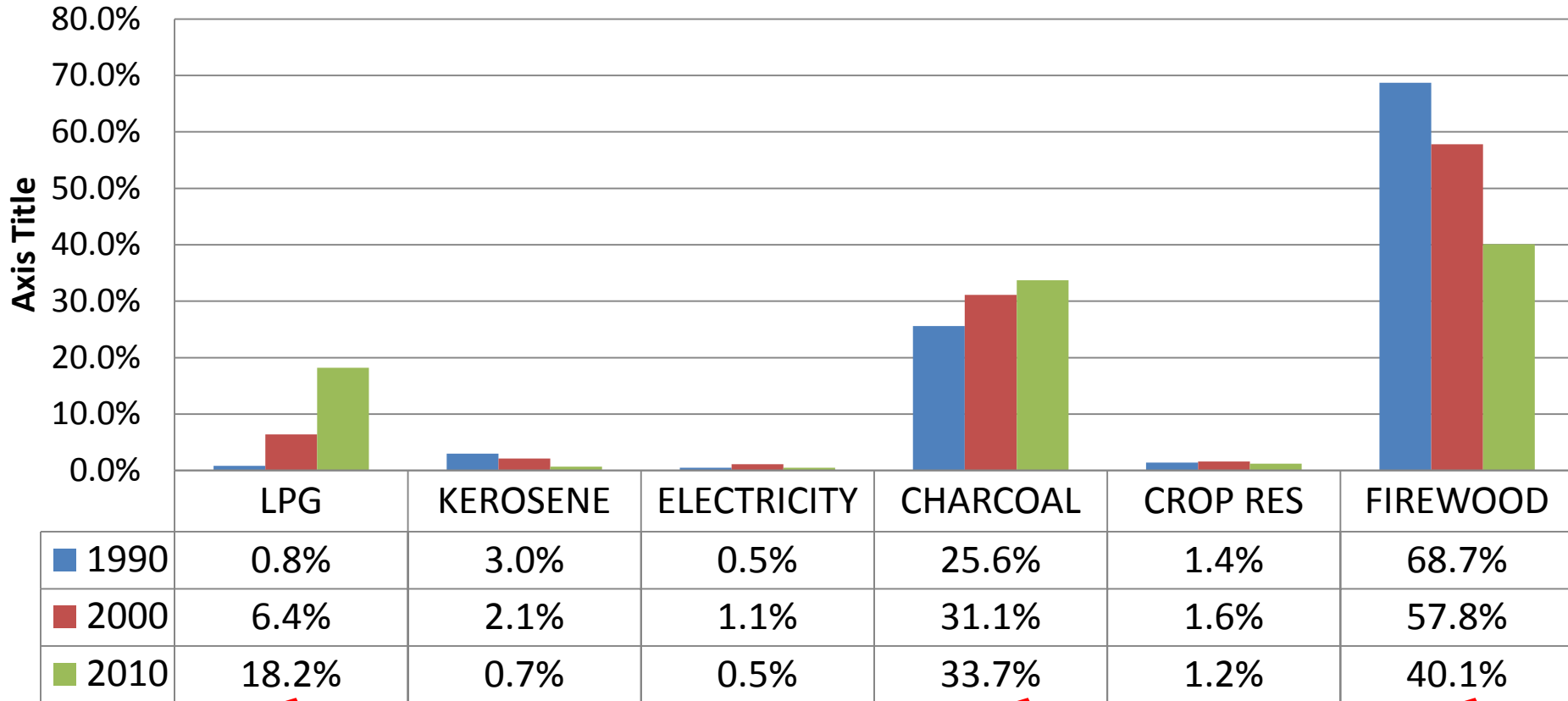
FINAL ENERGY CONSUMPTION IN 2011 - (8135.9 ktoe)



Source: EC 2011 Energy Statistics; Graph by: W.A. Togobo 2013

- More than 56% of final energy is used for cooking and heating.

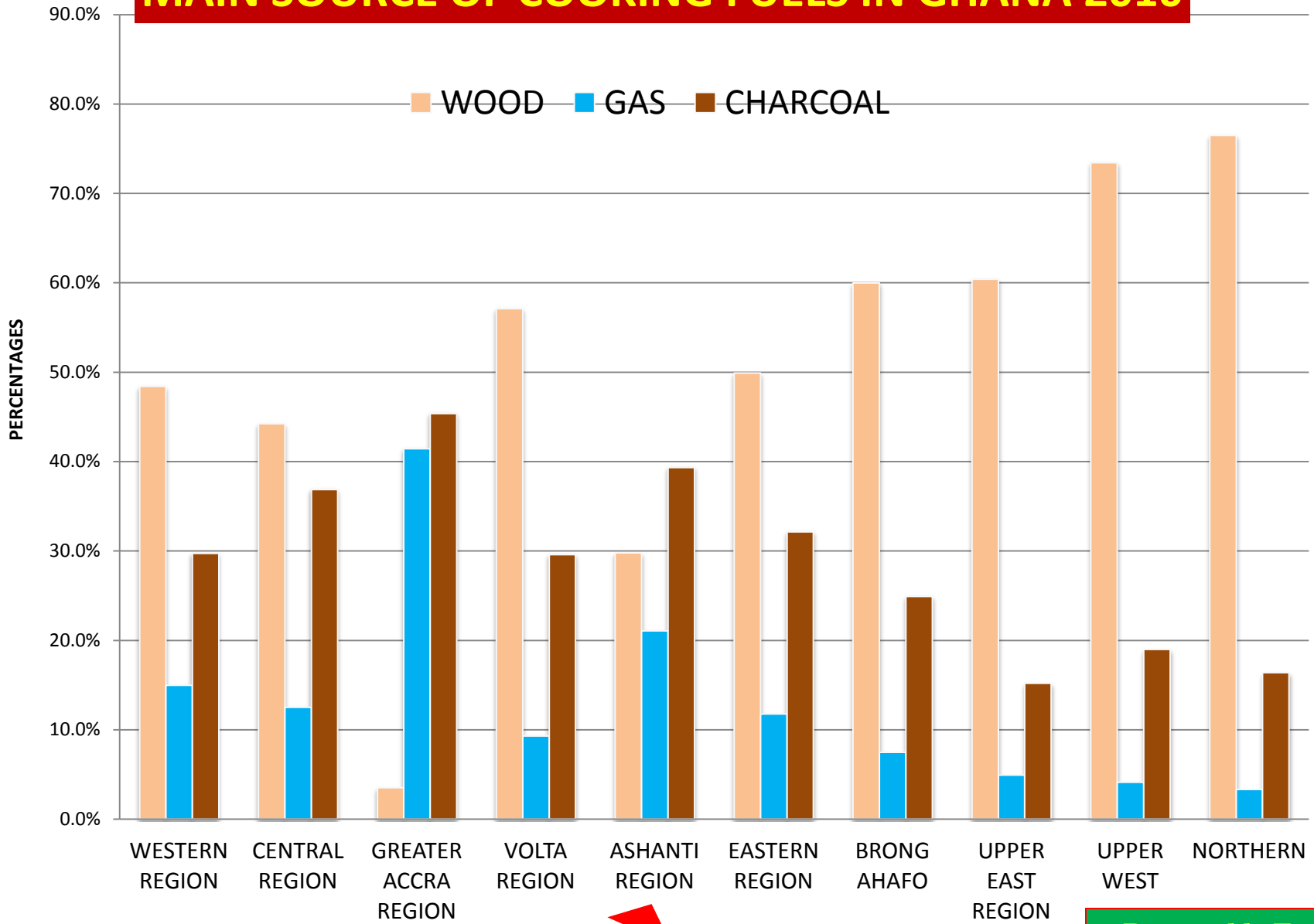
SHARE OF MAIN COOKING FUELS IN GHANA



Kerosene, Electricity and Crop residues together accounts for less than 2.5%

Demand for LPG and charcoal is increasing with decreasing demand for firewood, kerosene and electricity.

MAIN SOURCE OF COOKING FUELS IN GHANA 2010

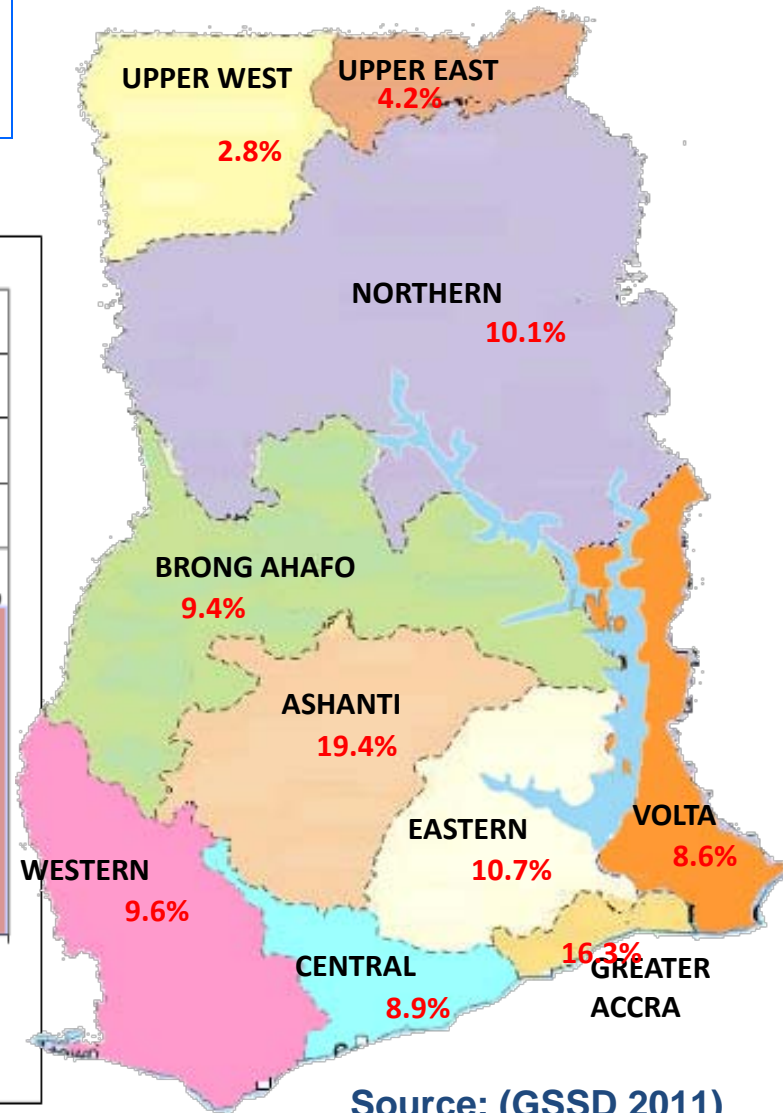
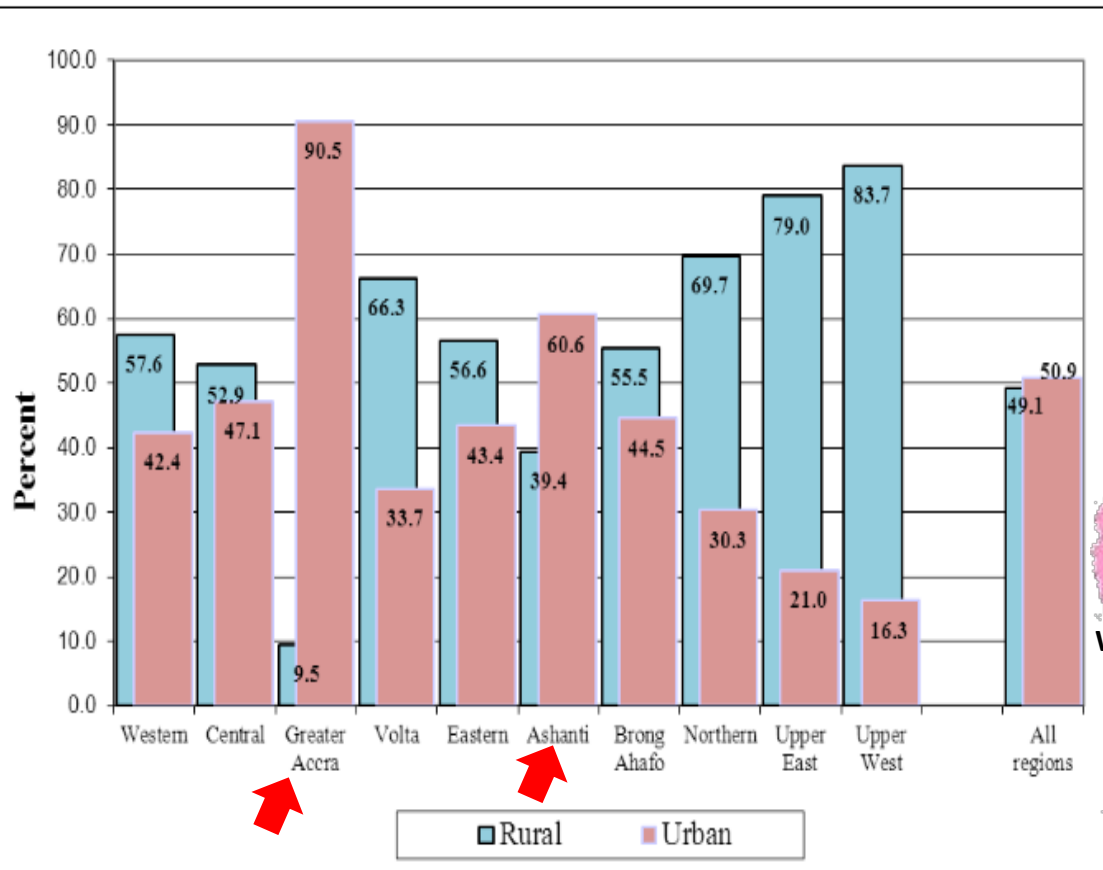


Ghana



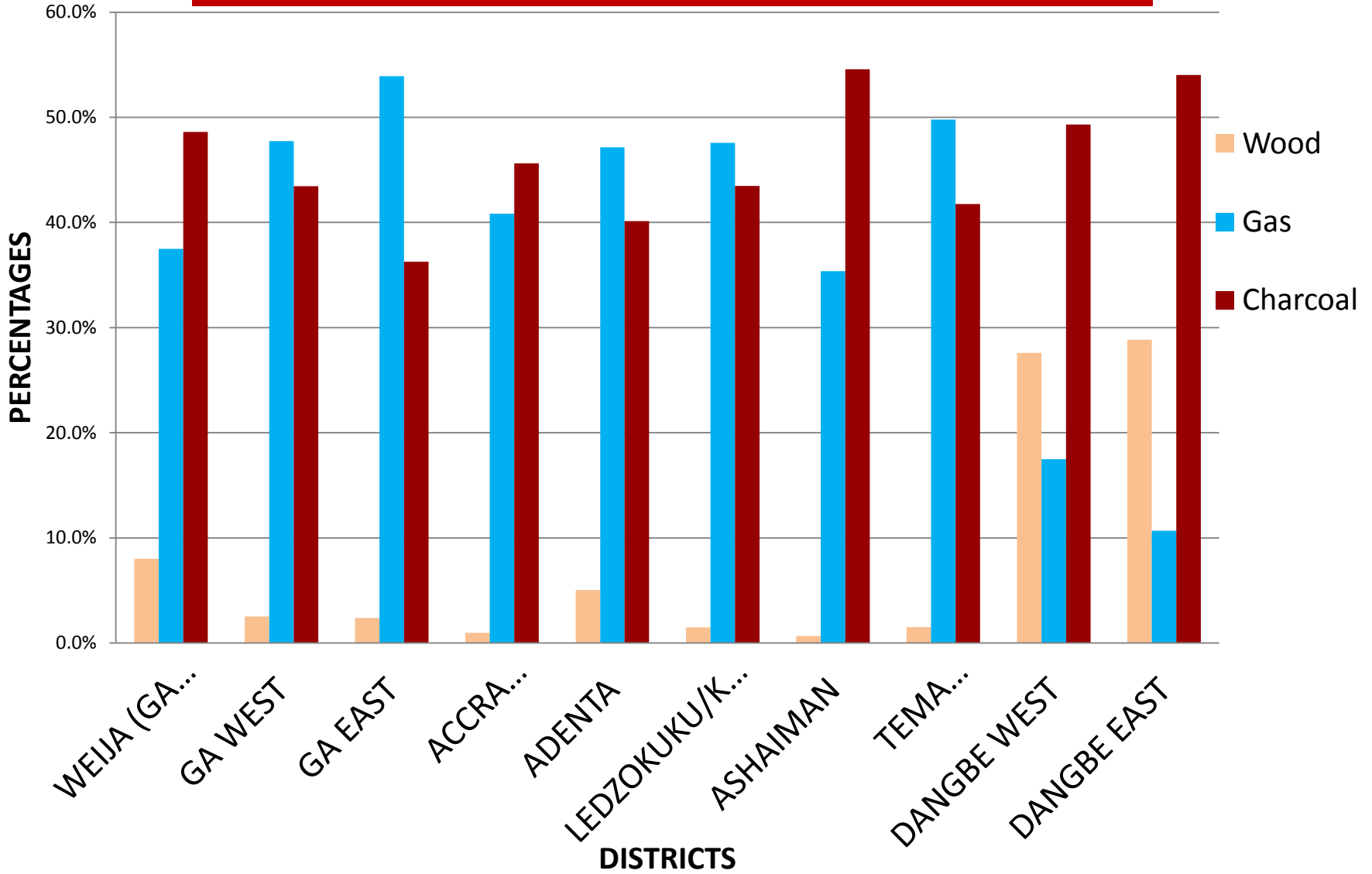
- Land Area: 238.5 km²
- Population: 24,256,000 (2010)

Figure 4: Population by type of locality (urban and rural)

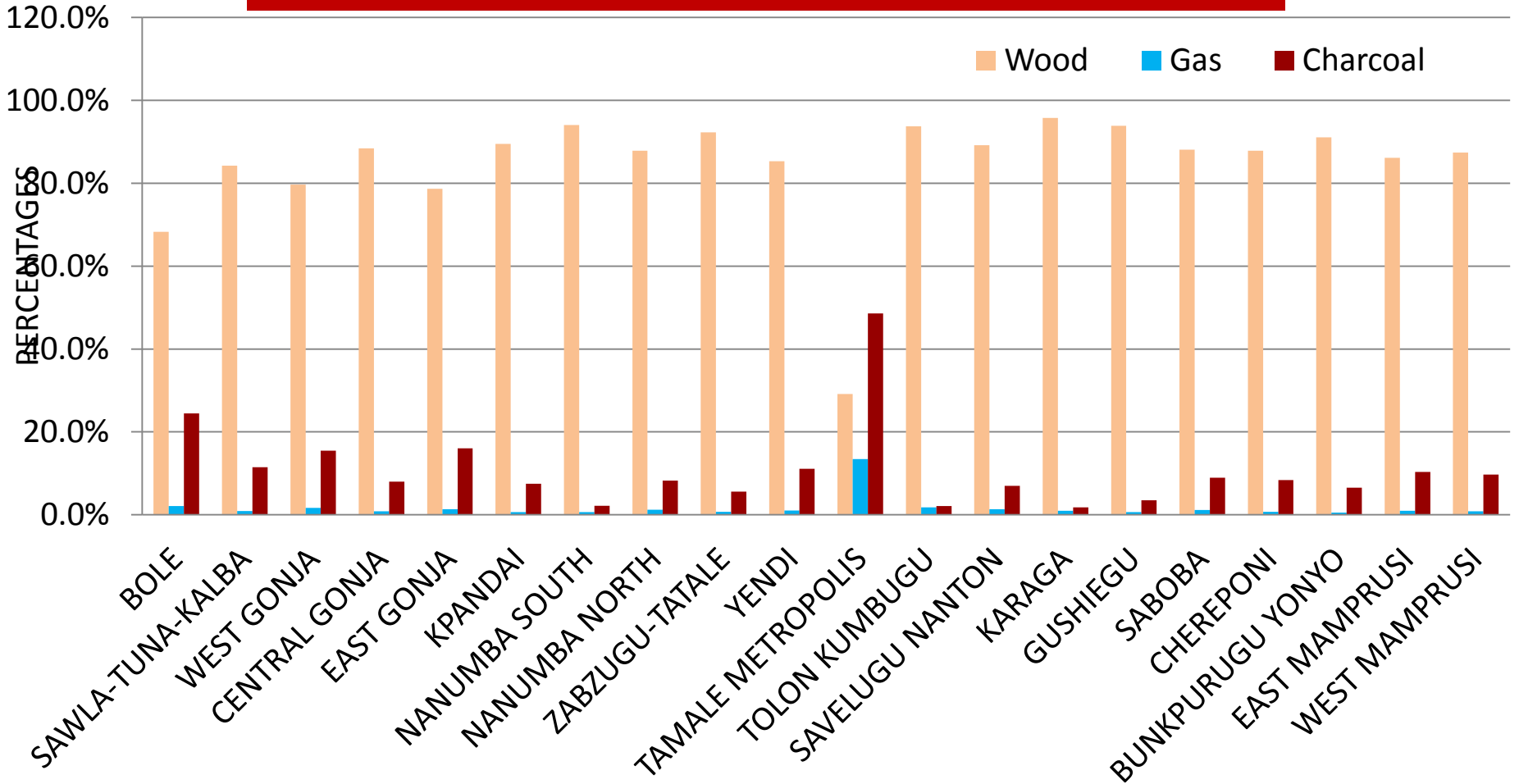


Source: (GSSD 2011)

MAIN SOURCE OF COOKING FUEL IN GREATER ACCRA REGION

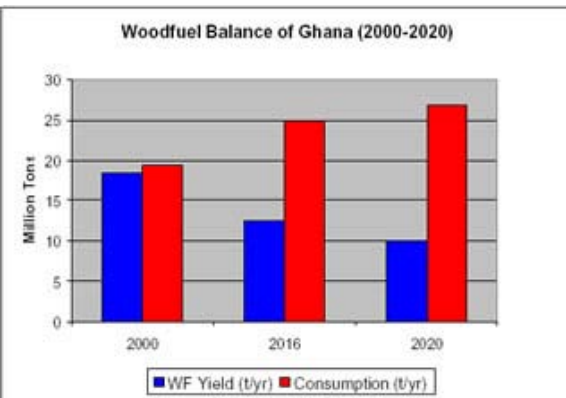


MAIN SOURCE OF COOKING FUEL IN NORTHERN REGION



Traditional Cooking Fuels –Major Issues

- **Energy Security.**
 - Growing imbalance in woodfuel consumption and yield due to inefficient production and utilization -(Food processing and heating).
- **Climate Change Mitigation**
 - Environmental threat due to bush fires, land degradation among others
- **Health and Sanitation**
 - Smoke and indoor air pollution from inefficient woodfuel use



Traditional Cooking Fuels –Major Issues

- **Employment and Social Welfare**
 - Wood fuel (firewood and charcoal) production are the main source of income for the poor majority in the dry seasons.
 - It is also the main source of revenue for most deprive districts.
 - Policy to regulate and licence this activity has direct impact on the social livelihood of the poor.



Traditional Cooking Fuels –Major Issues

- Gov. in most developing countries have paid little attention to household cooking fuel as in the case of transport fuel and electricity
 - limited resource allocation for data acquisition on woodfuels
- Household energy programmes have been driven by donor organizations and NGO.
 - Programme often abandoned after donor funds are exhausted
 - No public Agency responsible for ensuring continuity.

Modern Cooking fuels in Ghana - Challenges

- Accessibility
 - Storage, Distribution and reliability.
- Cost
 - High cost of the cooking device and accessories the enduse device.
- Fuel price uncertainty and subsidy challenges
 - benefits of fuel subsidies are hardly enjoyed by the target group.
- Safety concerns in the case of LPG

Renewable Energy Options for cooking: How realistic?

- Solar Cooker
 - Not suitable for cooking most staple foods ie. Banku, TZ, Kokonte etc
- Biogas, Biomass briquettes & Gasifier
 - High cost in fuel production and cooking devices



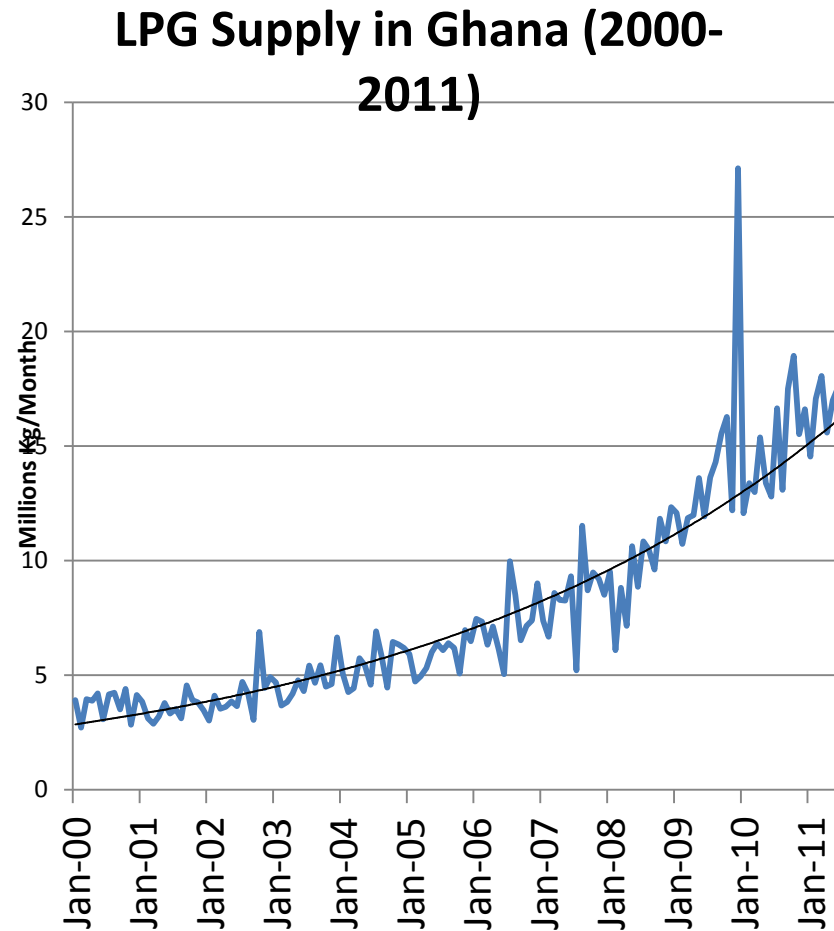
National Strategy – Cooking Fuels

- Ensure sustainable supply, affordability and access to cleaner cooking fuel alternatives – LPG, electricity, kerosene, etc
 - To encourage those that can afford to shift to cleaner fuels.
- The poor majority that cannot have access or afford cleaner fuels will be encouraged to use the local energy resources in an efficient and sustainable manner using modern methods (improved technologies and techniques)

National Strategy – Cooking Fuels

LPG, Kerosene etc

- Fuel subsidies
- Increased fuel supply
- The Challenge!
 - benefits of fuel subsidies are hardly enjoyed by the target group.
 - LPG used by commercial vehicles
 - Kerosene adulterated with diesel and sold for the price of diesel
- resulting in scarcity of fuel for the targeted cooking group



Way Forward for Ghana - LPG

- Remove subsidies on LPG and use funds meant for subsidy to:
- make LPG and accessories available and affordable.
- improved LPG storage and distribution outlets nationwide.
- Implement programmes for promoting LPG use in the **domestic, commercial and public institutions** (such as schools)
- **BIG ISSUE AND WORRY FOR GOVERNMENT**
 - How to remove the subsidies without loosing votes

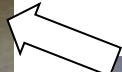
National Strategy - Woodfuels

- Ensure sustainable management of the woodfuel supply chain
 - Promote energy efficiency in the production, conversion and utilization of traditional woodfuel. (charcoal, firewood & crop residue)
 - Tree planting/ reforestation
 - Improved charcoal production methods
 - Improved cookstoves
 - Undertake intensive awareness creation on the negative effect of smoke inhalation

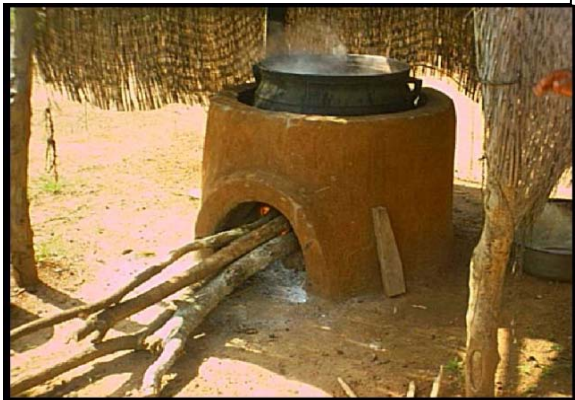
Woodfuel Plantations to ensure sustainability



Introduce Improved Stoves to replace traditional 3 Stone Stove to reduce smoke in the kitchen.



Traditional 3 stone stoves



Renewable Energy - Ministry of Energy

Train rural women in the construction of improved stoves for households



Encourage use of open ventilated kitchens to reduce indoor air pollution in the kitchen



Create awareness on Health Impact of Woodfuel Smoke



*Renewable Energy -
Ministry of Energy*

Support training workshop on Fire prevention and basic fire fighting for LPG use



3-Stone Stove



- Main Construction Material is 3-stones

Advantages

- No construction cost
- No professional skill required for construction.
- No Kitchen or Shed Required against stove damage by rain
- No maintenance required - very durable
- Stove position is changeable
- Cooks fast
- Suitable for preparation of all kinds of local food (banku)

Disadvantage

- Very low fire safety against children
- Emits smoke in cooking environment
- High fuel consumption

Automobile Rim Stove



- Main Construction Material - Rim of vehicle tyre

Advantages

- Low construction cost - \$6-10
- Professional skill required for fabrication.
- Purchased off the shelf at main market centres.
- No Kitchen or Shed Required against stove damage by rain
- No maintenance required - very durable
- Stove position is changeable
- Cooks fast
- Suitable for preparation of all kinds of local food (banku)
- Stable for pots

Disadvantage

- Emits smoke in cooking environment
- High fuel consumption

Shielded Mud Stove



- Main Construction Material - Clay and straw

Advantages

- Professional skill required for construction could be located or trained within community.
- Cooks fast and retains heat for simmering
- Suitable for preparation of all kinds of local food (banku)
- Pot is very stable and safe for children
- Accepts wide range and size of fuelwood
- Low fuel consumption when properly constructed
- Emits less smoke in cooking environment

Disadvantage

- Stove position is permanent and unchangeable
- Requires regular maintenance for durability
- Requires kitchen or shed against damage by rain
- Moderate to high construction cost - \$20-50.

Smokeless Mud Stove



- Main Construction Material - Clay & Straw

Advantages

- Emits smoke completely in cooking environment
- Keeps kitchen environment clean and cool
- Pot is very stable and safe for children
- Accepts wide range and size of fuelwood
- Fuel is fed outside kitchen

Disadvantage

- Stove position is permanent and unchangeable
- Relatively high fuel consumption
- Professional skill required for construction.
- Construction cost is moderately high - \$100-200.
- Requires specific pot size to optimize efficiency
- Requires regular maintenance

Walewale Smokeless



- Main Construction Material - Cement Concrete

Advantages

- Emits smoke completely out of cooking environment
- Keeps kitchen environment clean and cool
- Requires very little maintenance.
- Pot is very stable and safe for children
- Accepts wide range and size of fuelwood
- Fuel is fed behind kitchen

Disadvantage

- Stove position is permanent and unchangeable
- Relatively high fuel consumption
- Professional skill required for construction.
- Construction cost is very high. - \$300-400
- Requires specific pot size to optimize efficiency

Rocket Stove (Gyapa Muchia)

- Main Construction Material - Scrap metals, ceramics

Advantages

- Emits no smoke in cooking environment due to complete combustion in long chamber.
- Requires very little maintenance.
- Pot is very stable and safe for children
- Very low fuel consumption
- Stove position is changeable and easily transportable
- Cooks fast

Disadvantage

- Professional skill required for fabrication.
- Stove cost is high. - \$100-130
- Pot level is too high for cooking stable food such as banku, TZ etc.
- Over 80% of stove introduced in WFP schools abandoned



Rocket Chimney Stove (Gyapa Danga)



- Main Construction Material Oil drum, cyramics

Advantages

- Emits smoke completely out from cooking environment through its chimney.
- Requires very little maintenance.
- Pot is very stable and safe for children
- Very low fuel consumption
- Stove position is changeable and easily transportable
- Cooks fast

Disadvantage

- Professional skill required for fabrication.
- Stove cost is high. - \$100-130
- Pot level is too high for cooking stable food such as banku, TZ etc.
- Over 80% of stoves introduced in WFP schools abandoned



Way Forward for Ghana - Woodfuels

- Support R&D and promotion of
 - efficient cookstoves that are suitable for most of staple foods.
 - improved charcoal production technologies to increase yield



Conclusion

- Woodfuel will continue to be the dominant cooking fuel in the foreseeable future.
- MDG goal and the ECOWAS white paper for energy access (cooking fuel) is unachievable by 2015
- SE4ALL target for 2030 to switch from traditional fuel to cleaner fuels is attainable if:
 - Efforts are put in place to add value to our rich natural resource.
 - There is improvement in income and living standard of households
 - There is extensive public awareness on the negative impact of traditional fuel on health and the environment.

Conclusion

- Ghana supports the Action Plan for SE4ALL initiative of the UN Secretary General.
- Ghana has also signed as an Implementing Partner for the Clean Cooking Alliance Initiative.
- Ghana is committed to increasing access to clean and improved cooking stoves.
- The Government of Ghana welcomes technical and financial support from the international community to address challenges for ensuring access to sustainable and affordable cleaner cooking fuels.
- ECREEE should be resource adequately to continue this platform of knowledge sharing to avoid duplication of mistakes

Thank You

**For further details please contact
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