



MEST

COUNCIL FOR SCIENTIFIC & INDUSTRIAL RESEARCH (CSIR – Ghana)

Accelerating National Development
through Science, Technology and Innovation

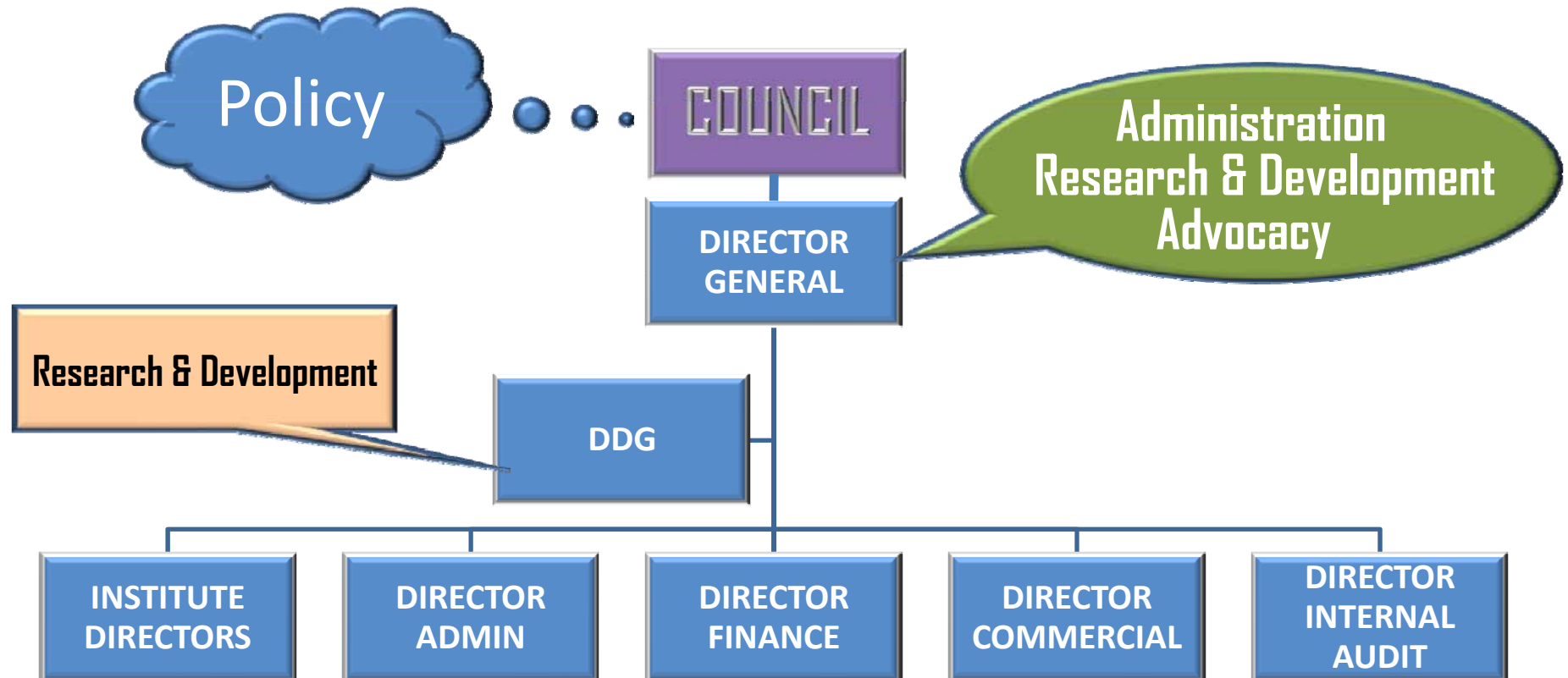
PRESENTED BY DR ABDULAI B. SALIFU
DIRECTOR GENERAL

CSIR GOVERNANCE STRUCTURES

CSIR COUNCIL

- 21-member Council; **Chairperson** appointed by H.E. The President of the Republic.
- Membership drawn from:
 - *Institutional representation*
 - *Nominees by government (eminent persons)*
 - *CSIR Senior Staff*
- Tenure is three years
- Functions as per **Act 521** of 1996.

CSIR ORGANOGRAM



INTERNAL GOVERNANCE

- **Corporate Management Team:**

- **Director General;**

- *Deputy Director General*
 - *Director; Administration*
 - *Director; Finance*
 - *Director; Commercialization*
 - *Director; Internal Audit*

- **Executive Committee.**



Includes:
Director's Representative
Legal Officer

- **Directors' Management Committee.**
- **Other Statutory Committees.**

INSTITUTE LEVEL GOVERNANCE

- Each institute headed by a **Director**; supported:
 - *Deputy Director*
 - *Administrative Officer*
 - *Accountant*
 - *Commercial Officer*
- Internal Management Committee (IMC):
 - Heads of Divisions (8 statutory)
 - Interest Groups:
 - **RSA, SSA and TUC.**
- 7-member Management Board.

CSIR RESEARCH MANDATE

WHAT IS DONE

- The Council runs and coordinates activities of 13 research institutes reflecting productive sectors of the Ghanaian economy.
- Their respective mandates come together to reflect the following focal areas:
 - *Agriculture, environment, forestry and fisheries,*
 - *Health and medicine,*
 - *Industry and natural sciences,*
 - *Social sciences.*
- Provide technology for development; “ground-truth” for informed policy formulation/decision.

CSIR INSTITUTES

- Animal Research Institute (ARI)
- Building and Road Research Institute (BRRI)
- Crops Research Institute (CRI)
- Food Research Institute (FRI)
- Forestry Research Institute of Ghana (FORIG)
- Institute for Scientific & Technological Information (INSTI)
- Institute of Industrial Research (IIR)
- Oil Palm Research Institute (OPRI)
- Plant Genetic Resources Research Institute (PGRRI)
- Savanna Agricultural Research Institute (SARI)
- Science & Tech. Policy Research Institute (STEPRI)
- Soil Research Institute (SRI)
- Water Research Institute (WRI)

CSIR NATION-WIDE



RESEARCH MANDATE

- MANDATE recognized by Act 521 of 1996.
- Some 14 functions ascribed to the Council, *e.g.*:
 - Pursue **implementation of policies** on scientific research and development.
 - **Advise** the Minister on scientific and technological advances likely to be of importance to national development.
 - **Coordinate all** aspects of scientific research in the country and to ensure that the Council, the research institutes of the Council and other organizations engaged in research in Ghana, coordinate and cooperate in their research efforts.
 - ***Etc, etc, etc***

IMPLEMENTATION OF MANDATE

- **Sector Ministry (MEST) Policy on STI:**
 - The principal thrust of the National Science, Technology and Innovation Policy is to ensure that science and technology drives all sectors of the economy.
 - Sectoral policies in ***Agriculture, Health, Education, Environment, Energy, Trade, Industry, Natural Resources*** shall be driven by sector-specific science and technology programs and activities.

GUIDING PRINCIPLES

- **Relevance:** There is the need to critically examine areas and programs of relevance to the country's development.
- **Cost-effectiveness:** There must be the use of the most cost-effective means to achieve the desired results.
- **Realism:** Whereas Ghana desires to reach the frontiers of STI application and development, there is the need for realism in aspirations and efforts.
- **Synergy:** STI development and application must be holistic; there must be a multi-disciplinary and cross-sectoral approach to problem-solving for synergy; and
- **Partnerships:** There must be conscious efforts for collaboration and interaction with all local and foreign stakeholders as partners.

FOR CSIR

**USING TRANSFORMING POWER OF
STI FOR WEALTH CREATION**

FOCUS OF RESEARCH

- Development and Transfer of Technologies and Provision of Services **appropriate to needs of our stakeholders.**
- Technologies identified by strong focus on our core business of scientific research and enquiry, producing outcomes that will solve national development problems.
- Commercialization of Science and Technology Research Outputs for Increased Productivity and Accelerated Growth: **CSIR-Plus**

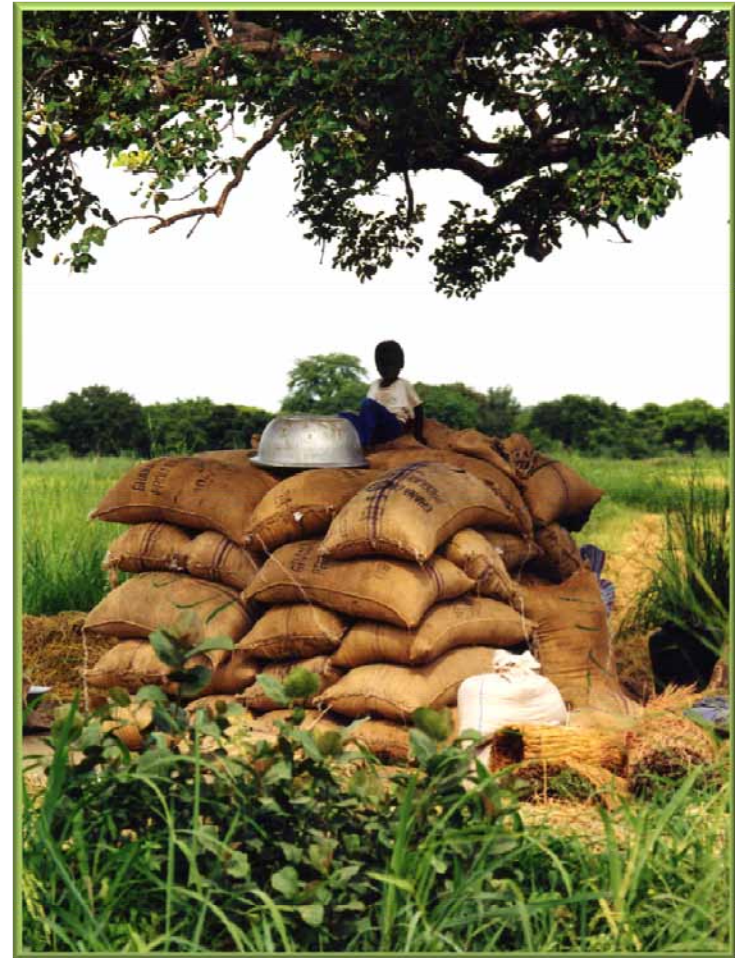
OPERATIONAL OPTIMUMS

- Fully equipped functional laboratories:
 - Varying degrees of functionality
 - *State-of-art equipment.*
 - *Housing configuration.*
 - *Qualified technical staff.*
- Experimental field sites; including out-station posts:
 - Very minimal to zero land tenure issues.
- Industrial mini plants and related equipment.
- Mobility – transportation and related very key.

SOME CSIR INTERVENTIONS

IMPROVED CROP VARIETIES

- All of the improved varieties of:
 - *Cereals*
 - *Legumes*
 - *Root and Tubers*
 - *Plantains and Banana*
- Developed by CSIR for specific agro-climate and uses, including agro-processing.



HORTICULTURAL CROPS



- Mango museums at **SARI, CRI** and **PGRRI**.
- CSIR-SARI Mango museum has 27 accessions.
- CSIR-PGRRI: vegetative propagation of **nutmeg**.
- PGRRI provides planting material of black pepper.

FISHERIES AND FISH FARMING

- Production of breeds of tilapia and catfish fingerlings.
- *Formulation and production of high quality fish feed.*
- Extension of FRISMO fish smoker to women fish processors.
- *Training of fisher folk on good fishery management.*



LIVESTOCK and POULTRY



- CSIR-ARI **ARIBRO** broiler lines; reduces production costs, matures in 7 weeks.
- Hands-on training in livestock, poultry production
- Pig feed: Grower **finisher diets** ensures faster growth; slaughter weights attained in 5 mths!

OIL PALM and COCONUT



- Provision of high yielding oil palm progenies and their seedlings.
- Provision of varieties of coconut; some tolerant to Cape St. Paul wilt disease.
- Technologies for integrating small ruminants in oil palm farms.

VALUE ADDITION TECHNOLOGY



- **CSIR-Food Research Institute** has array of agro-processing/value addition technology.
- A number of commercial convenience foods in the Ghanaian and external market.

NATURAL FOREST MANAGEMENT



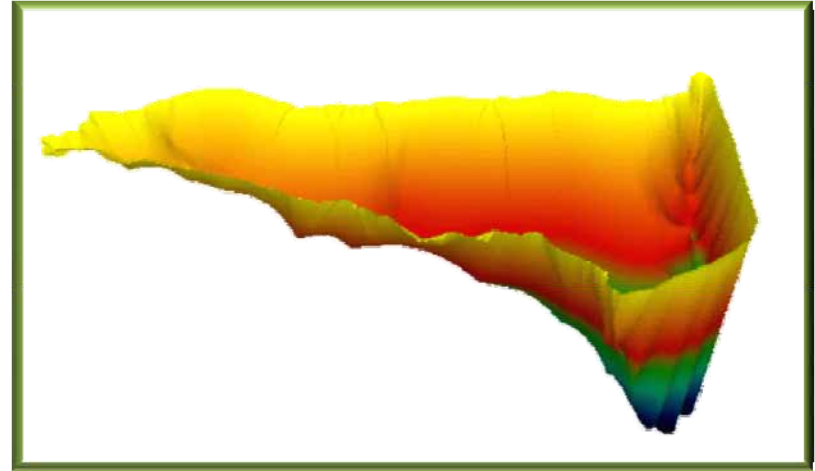
- Manual of Procedures, Forest Resource Management Planning in High Forest Zone.
 - *Geared at sound fire management for protecting and rehabilitating forest resources.*
 - *Meant to provide guidelines for comprehensive strategic planning and practical steps to be taken by resource managers.*

ROADS AND HOUSING

- CSIR-BRRI low cost technology employing **bricks** and **pozzolana** cement.
- Pozzolana-lime technology for stabilizing rural/feeder unpaved roads.
- Timber bridge construction technology

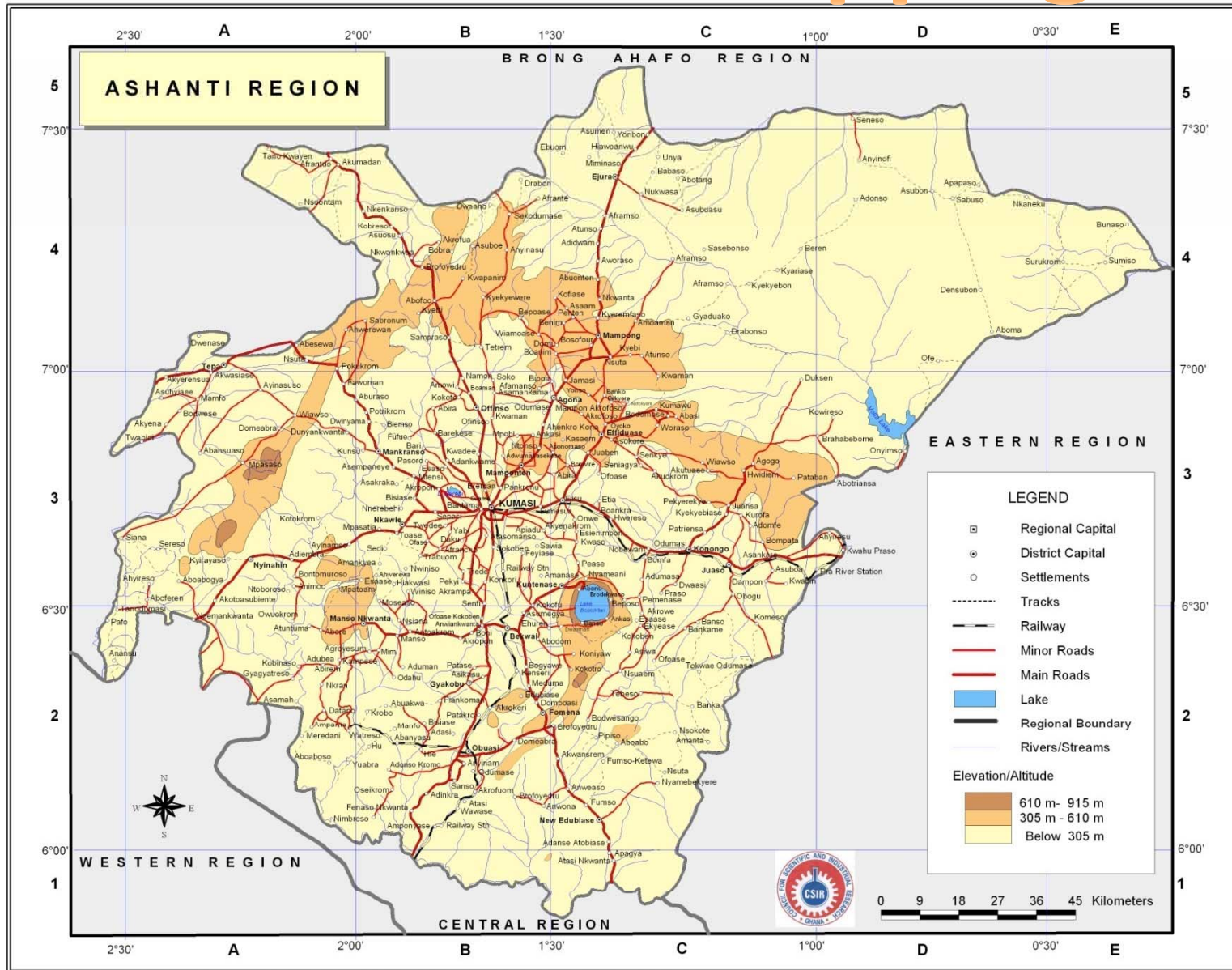


PROVISION OF WATER



- Ground water exploration.
- Drilling of wells for communities, etc.
- Assessment of water quality.
- Construction of infiltration galleries behind dams.

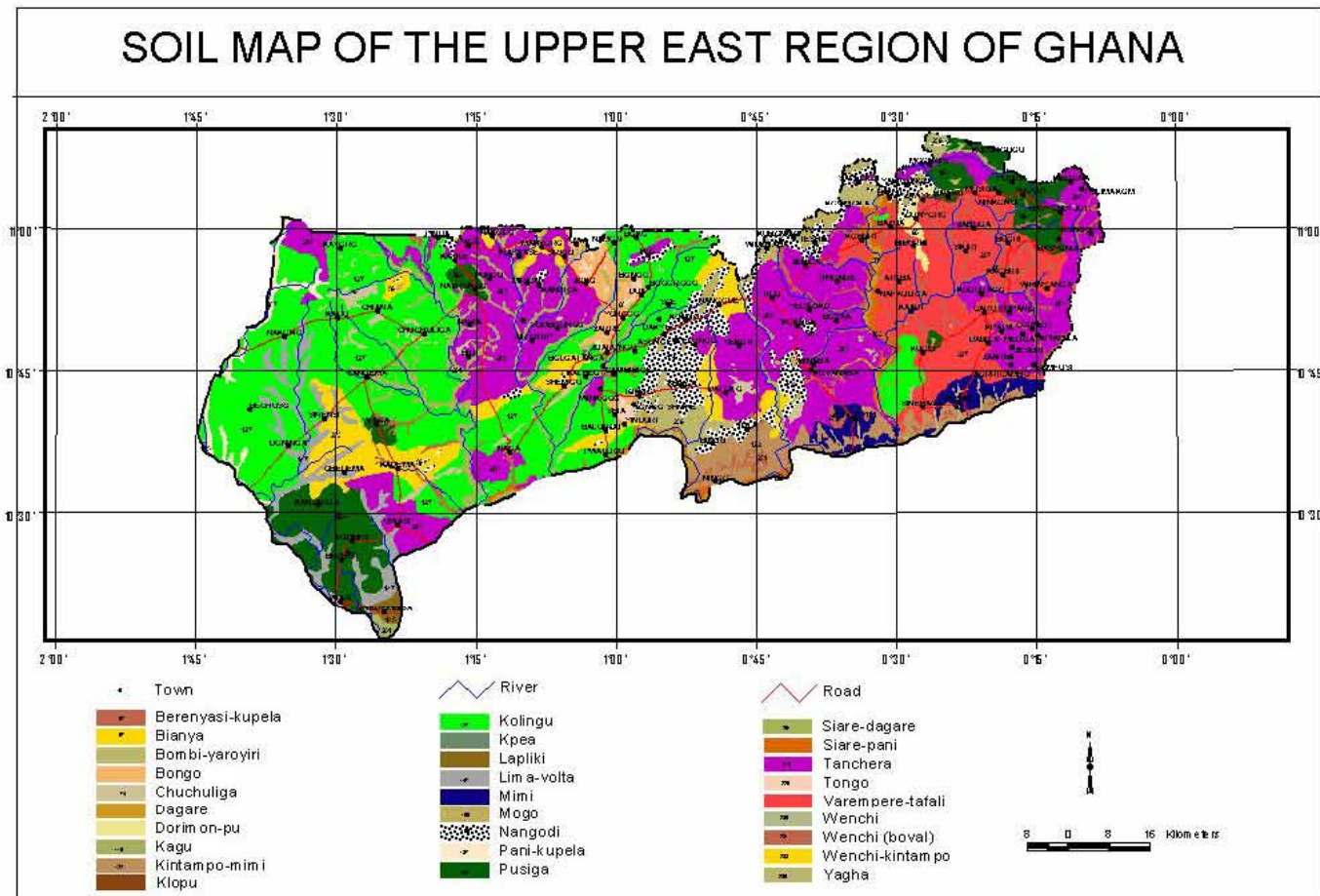
Thematic Mapping



Compiled and drawn by the Thematic Mapping Division of the Institute for Scientific & Technological Information, INSTI/CSIR - 2008

Data source: Survey Department

SOIL SERIES and SUITABILITY MAPS



NEW INITIATIVES from CSIR-Ghana

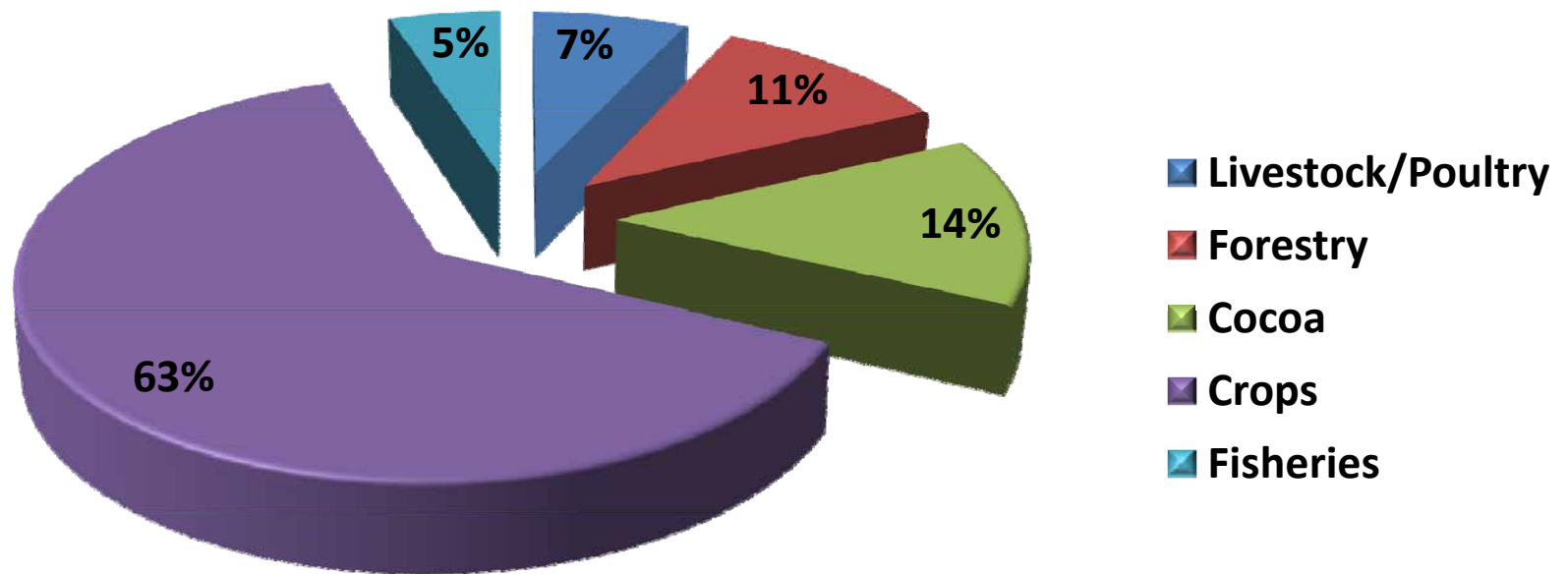
CSIR - *Plus*

gsst@csir



RESEARCH IMPACT

Agricultural GDP

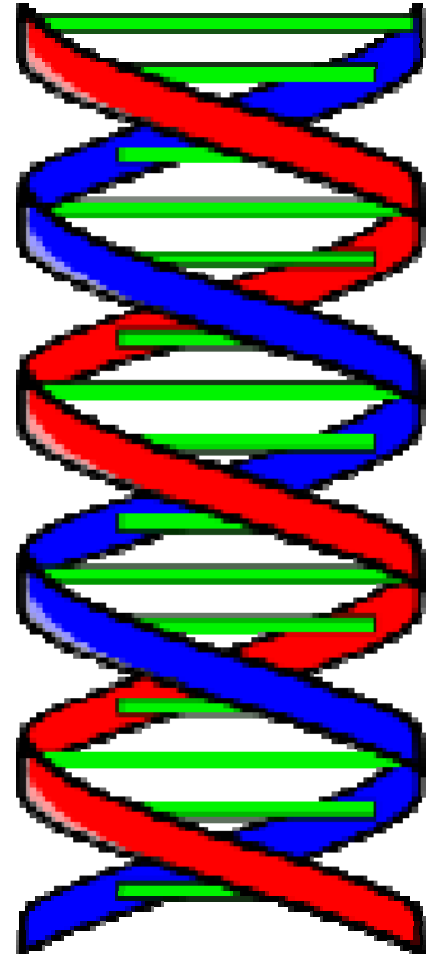


CSIR activities impact on sectors accounting for 86%

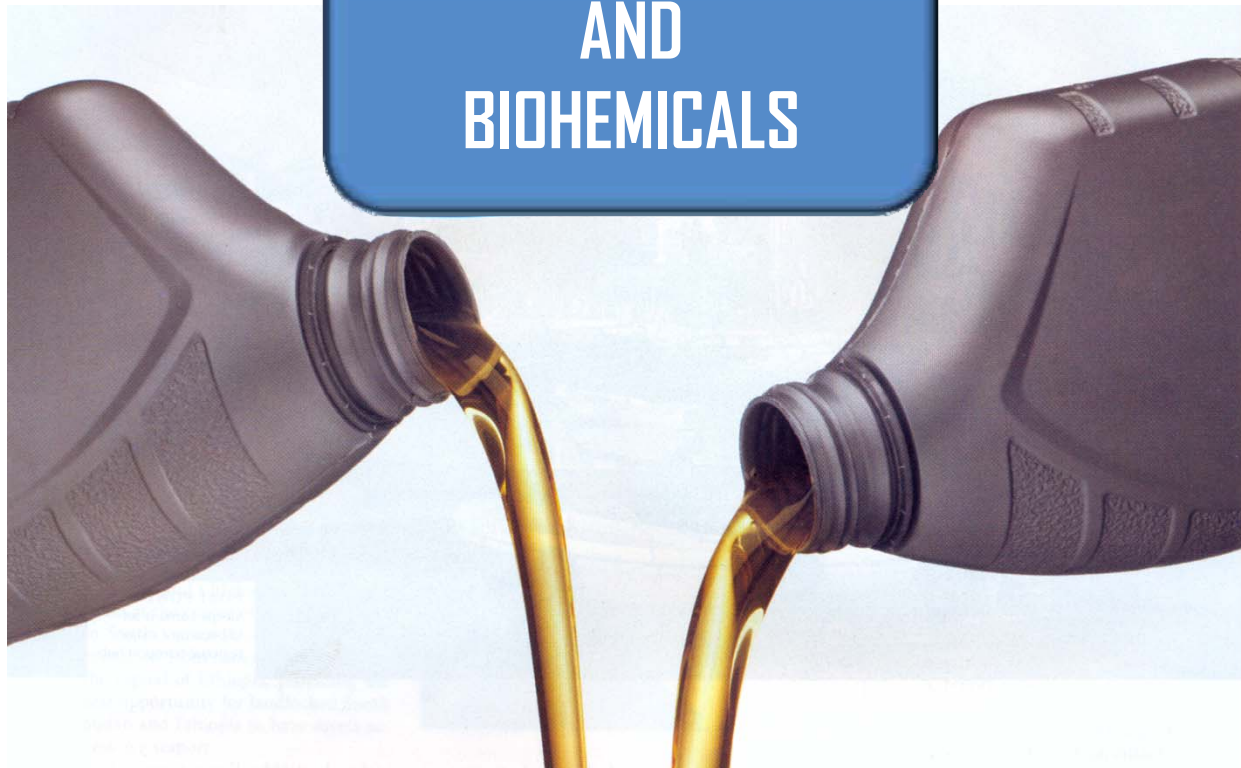
NEW RESEARCH FOR DEVELOPMENT

MODERN BIOTECHNOLOGY

- PCR-based studies to enhance:
 - *Marker Assisted Selection (MARS).*
 - *Introduce plant protection, yield and nutrient enhancing genes.*
- Cognizant of cost to farmer of biotech products.



BIOFUELS AND BIOCHEMICALS



From Biomass

BIOFUELS AND BIOCHEMICALS

THE PRICE FACTOR

10 US\$



100 US\$

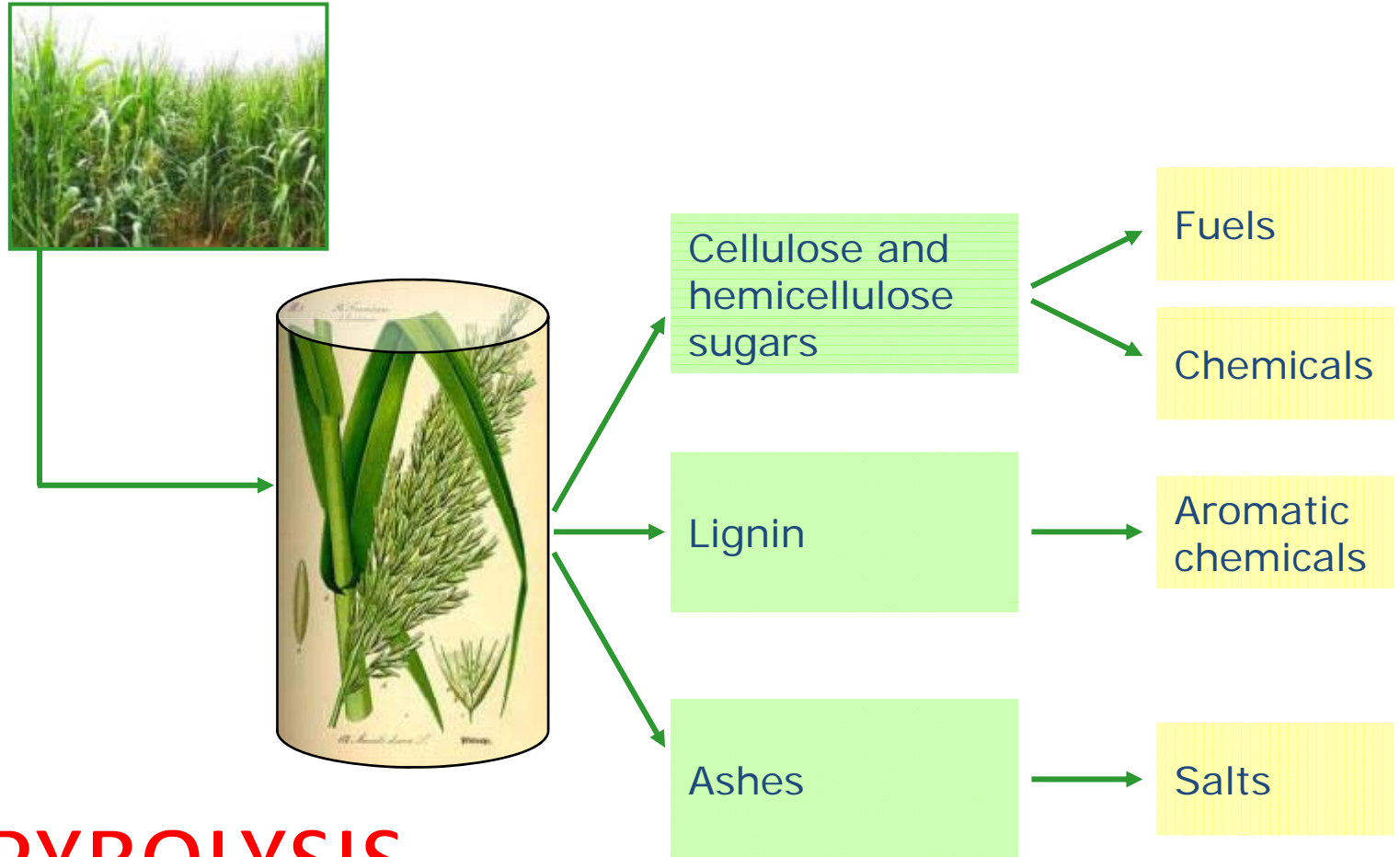


1 barrel = 165 liters

**Large price gap in raw materials enough
to justify R&D in secondary
biofuels using biomass**

BIOFUELS AND BIOCHEMICALS

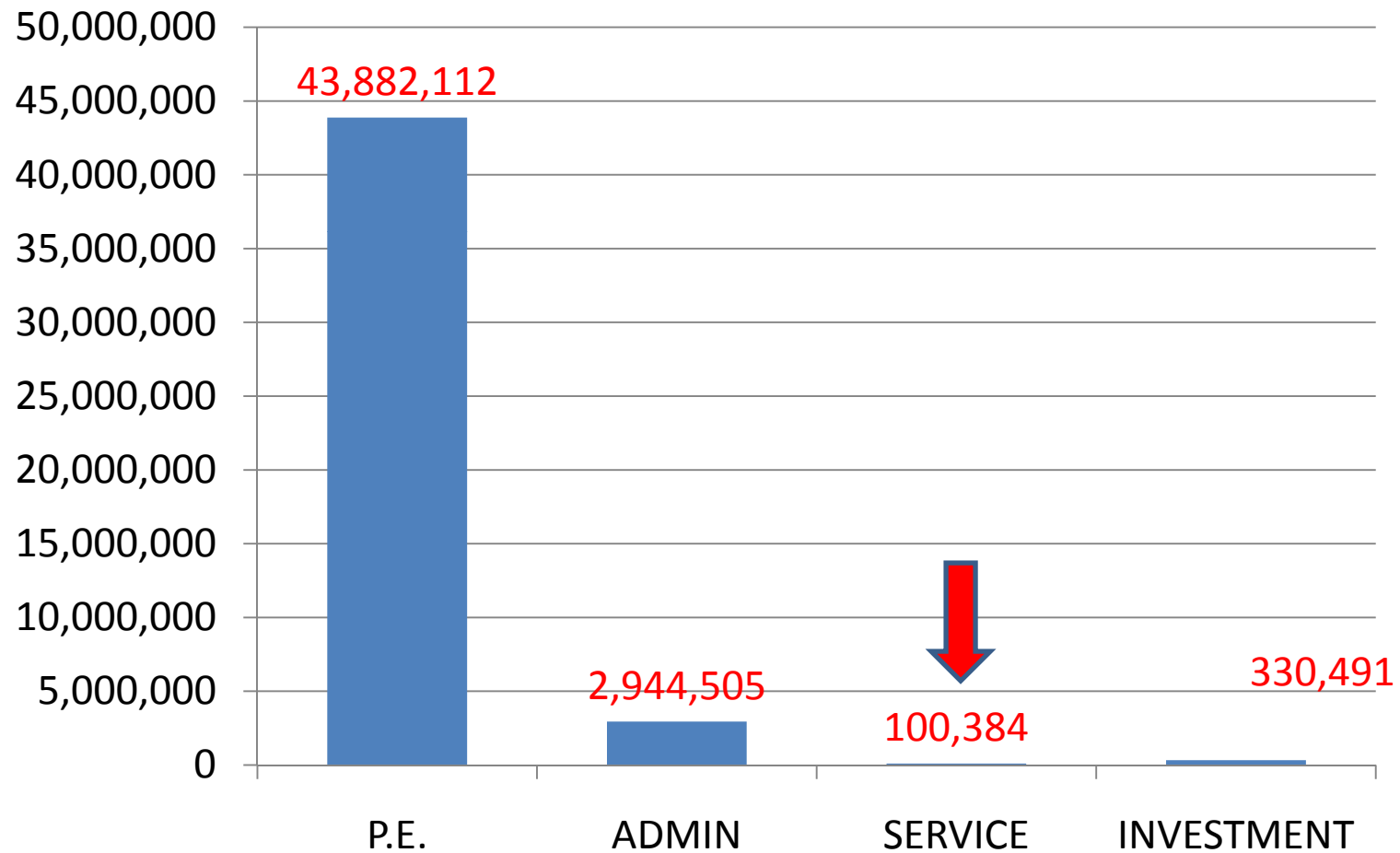
IMMENSE OPPORTUNITIES!



**FAST PYROLYSIS
GASIFICATION**

CHALLENGES FACED BY CSIR

RESOURCE LEVEL FOR CORE BUSINESS: 2011



2012 REQUEST & ALLOCATION

	TOTAL	COMPENSATION	GOODS & SERVICES	ASSETS
REQUEST	98,747,499.00	54,262,625.00	16,716,528.00	26,104,500.00
ALLOCATION	49,377,366.00	44,038,140.00	3,144,889.00	530,491.00
SHORTFALLS	49,370,133.00	10,224,485.00	13,571,639.00	25,574,009.00

THANK YOU

