


# The African Molecular Marker Applications Network (AMMAnet): Mission, Objectives and Activities



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# Why AMMAnet?

- Biotechnology is regarded a potential tool to help solve Africa's complex crop production problems
  - However, requires substantial human and capital investment
  - African countries can not afford individually
  - Networking is good
    - Economies of scale and scope
    - Synergies
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## A typical Laboratory



- Lately, a few biotech laboratory have been successfully established in various parts of Africa
- Typical NARS labs
- Marker applications are a major activity
  - Trait introgression
  - Diagnostics
  - Diversity studies
  - Transformation
  - Population genetics



# Why AMMAnet

- Many of these labs in the region are at their infancy
  - Require active participation in regional or International
    - Technical networks
      - Scientific backstopping
      - Shuttle research
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# Planning Workshops



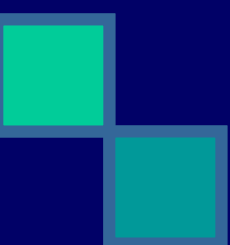

Dar es salaam



BECA Nairobi




## Mission statement:

- “To promote the application of molecular markers in plants for sustainable food security, environment and improved livelihoods in Africa”.
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# Objectives:

- To provide members with technical backstopping by assisting upcoming MAS laboratories to establish
  - To organize and support short- and long-term training in molecular marker technologies
  - To establish collaboration and research linkages with institutions of excellence
  - To assist plant breeders to improve efficiency and precision of breeding through the use of molecular tools
  - To contribute to management strategies for conservation and utilization of genetic resources
  - To mobilize resources for AMMANET activities
  - To provide a virtual resource database of infrastructure and other relevant information on molecular marker applications.
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# Activities:


- To achieve the objectives the following activities will be undertaken:
    - Exchange visits, workshops (invite world authorities to give lecturers in some topical issues), study tours, demonstrations.
    - Draft and submit proposals to relevant donors for funding to support AMMANET activities such as training, web hosting, conference attendance, and even funds to issue as small grants to fund special research by AMMANET as approved by the steering committee.
    - Share and provide information on the application of molecular marker technologies through the AMMANET website.
    - Collective bargains for lab supplies, subscription to e-journals??.
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# Governance:

- AMMANET is governed thru' a secretariat, which is under the direct control of a Steering Committee.
- Current members of interim steering committee:
  - Dr. Richard Edema (coordinator) (Makerere Univ; Uganda)
  - Dr. Jedidah Danson (KARI/CIMMYT; Kenya)
  - Dr. Pangirayi Tongoona (ACCI; S.Africa)
  - Dr. Ramni Jamnadass (ICRAF; Kenya)
  - Dr. Mutasim M. Khalafalla (Sudan)
  - Dr. Geofrey Muluvi (Kenyatta Univ; Kenya)

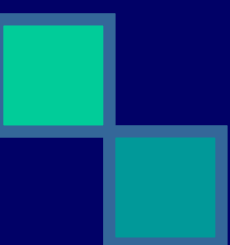


# Role of steering committee

- Providing technical guidance,
  - Sourcing for funding by writing proposals,
  - Arranging workshops,
  - To handle funds on behalf of the network.
  - The main decision making body
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# Membership

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- Free as long as focus is on crops and traits of importance to Africa
  - Simple on-line registration at [www.africancrops.net/ammanet](http://www.africancrops.net/ammanet)



# Membership


• Currently about 100 members, mainly

- NARIs
- Universities
- CGIARS

- Various discipline
    - Breeders
    - Molecular genetics
    - Agronomist
    - Pathologists etc.
  - and competencies
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# Next steps

- The yard stick for measuring success will be by delivering products to the resource poor farmer.
    - E.g cultivar (s) developed using MAS
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# Next steps: Examples of Traits where MAS is possible now in Africa

- Formation of crop-specific collaborative groups on projects to demonstrate utility of marker techniques and technologies
  - Labs closely linked to breeding programs
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- CIMMYT research:
    - Maize Streak Virus Disease resistance
    - Opaque-2 trait in Quality Protein Maize
  - CIAT research:
    - Cassava Mosaic Disease resistance
    - Cassava Green Mite resistance



# Focus on crops of economic importance to Africa

- **Maize, Sorghum, Cassava, Beans, Cashew, Cowpea, Banana, Trees, Pearl Millet, Finger Millet, Rice, Yam, Sweet potato, Sugarcane, Wheat** and Pigeon pea.
  - Traits of importance for each crop: Good summary in DeVries, J. and G. Toenniessen. 2001. Securing the Harvest: Biotechnology, Breeding and Seed Systems for African Crops. CABI Publishing, New York, NY.
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# Acknowledgements

- Rockefeller Foundation
    - Funds
    - Web hosting
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