

Country Report (Ethiopia): progress in biotechnology

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1. Regulatory issues

1. Amended proclamation
2. NBAC establishment
3. Genome editing guideline developed

2. Biotech (crops) research and commercialization progress.

1. Commercialized Bt-cotton
2. Biotech crops under confined field trial

- Ethiopia ratified a highly preventive biosafety law in 2009, as **Proclamation No.655/2009**
 - not allow Research and commercial use of GMO
 - Generally, preventive law for GMO R&D
- However,
 - As the understanding and economic importance of biotechnology products increased, the government amended the preventive **Biosafety law in 2015.**

- So, in 2015 the “Biosafety Proclamation was amended:
 - Allow Research on biotech crops/GMO
 - Allow commercialization of GMO.

For genome editing

- In the **amended proclamation** some important terminologies were not defined.
 - No definition of genome editing
 - No definition of genetic engineering
 - No definition of GMO
- For genome editing, it was agreed to have a **guideline**, considering existing proclamations

- **We developed: “Draft guideline for the regulation of genome editing technology in Ethiopia”**
 - **Animals**
 - **Plants**
 - **Microorganisms**
- **Submitted to “Environmental Protection Authority” regulatory body.**
 - **We are expecting comments or approval.**

Directive for GMO

- To implement the regulation, directives are approved
 1. Guidelines on environmental risk assessment of GMO
 2. Guidelines for transport and storage of modified organisms
 3. Directive to determine the procedure of a risk management strategy for dealing with accidents involving modified organisms.
 4. Directive issued to provide risk assessment parameters for modified organisms.
 5. Directive issued to determine the requirements for transport and storage of modified organisms
 6. Directive issued to establish major contents of an application for special permit to engage in the transactions of modified organisms for research or teaching
 7. Directive issued to determine the content of an application for undertaking deliberate release of modified organism

National Biosafety Advisory Committee (NBAC) was established in 2017.

- NBAC established by the Council of Ministers of FDRE under Council of Ministers Regulation No. 411/2017 on issues related to biosafety.
- The committee is:
 - Composed of a range of expert (breeders, lawyers, nutritionists), from relevant agencies,
 - 15 persons in total.
- The main function of the committee is
 - To provide scientific advice for the decision makers (Environmental Protection Authority)

What we've done so far?

- In 2018, the Government authorized cultivation of genetically modified cotton
 - Two Bt cotton hybrids
 - JKCH1050 and
 - JKCH1947

Biotech crops under trails

- Currently, EIAR has crops under trials:
 1. We have confined laboratory tests/green house/ on transgenic Enset (false banana), bacterial wilt disease.
 2. Confined field trials (CFTs) on two stacked maize hybrids (TELA™). Multi-locational (environment) field trail, Bt-Gt maize.
 3. CFT for 3 R-genes Late Blight Resistance (LBR) stack cisgenic potato.
 4. CFT for two BT-GT hybrid cotton varieties.
 1. Commercial farmers interested in GM cotton.

- So far, we don't have genome editing work on animals (regulation).
- We have genetic improvement program for Boran cattle: Combining conventional and GS (on-going project, reference population, phenotypic data collection in progress).



Thank you