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**Regulation of Biotechnology
in Livestock and Plants in Light of COVID-19**

Approval of GM varieties in India

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Indian Regulatory System – A Robust System

1. India is a federal democracy with clear division of powers between Centre and States.
2. Agriculture is a State subject.
3. Genetically Modified Organisms (for all applications including agriculture, healthcare and industrial) are controlled by Environmental Protection Act ,1986 which is administered by the Ministry of Environment and Forests of the Central Government. GEAC the final regulatory authority for appraisal of applications for GMO commercialization is under this Ministry.
4. The Department of Biotechnology under Ministry of Science & Technology of the Central Government promotes biotechnology research and applications in the country. RCGM is a committee under (DBT) which oversees generation of data for deregulation of GMOs.
5. Once a trait is deregulated (takes about 7-8 years) each hybrid/variety carrying that trait will undergo an approval process (takes about 2-3 years). Each State has to give a permission to conduct open field trials of GM crops in that state.

GENETICALLY MODIFIED CROPS – STATUS IN INDIA

Bt Cotton approved
2002 & 2005 : 12m ha



Bt Eggplant under
moratorium since 2010



GM Mustard pending
approval since 2017



GM TRAITS IN WAITING IN INDIA



HT Cotton



Bt, NUE, PUE Rice



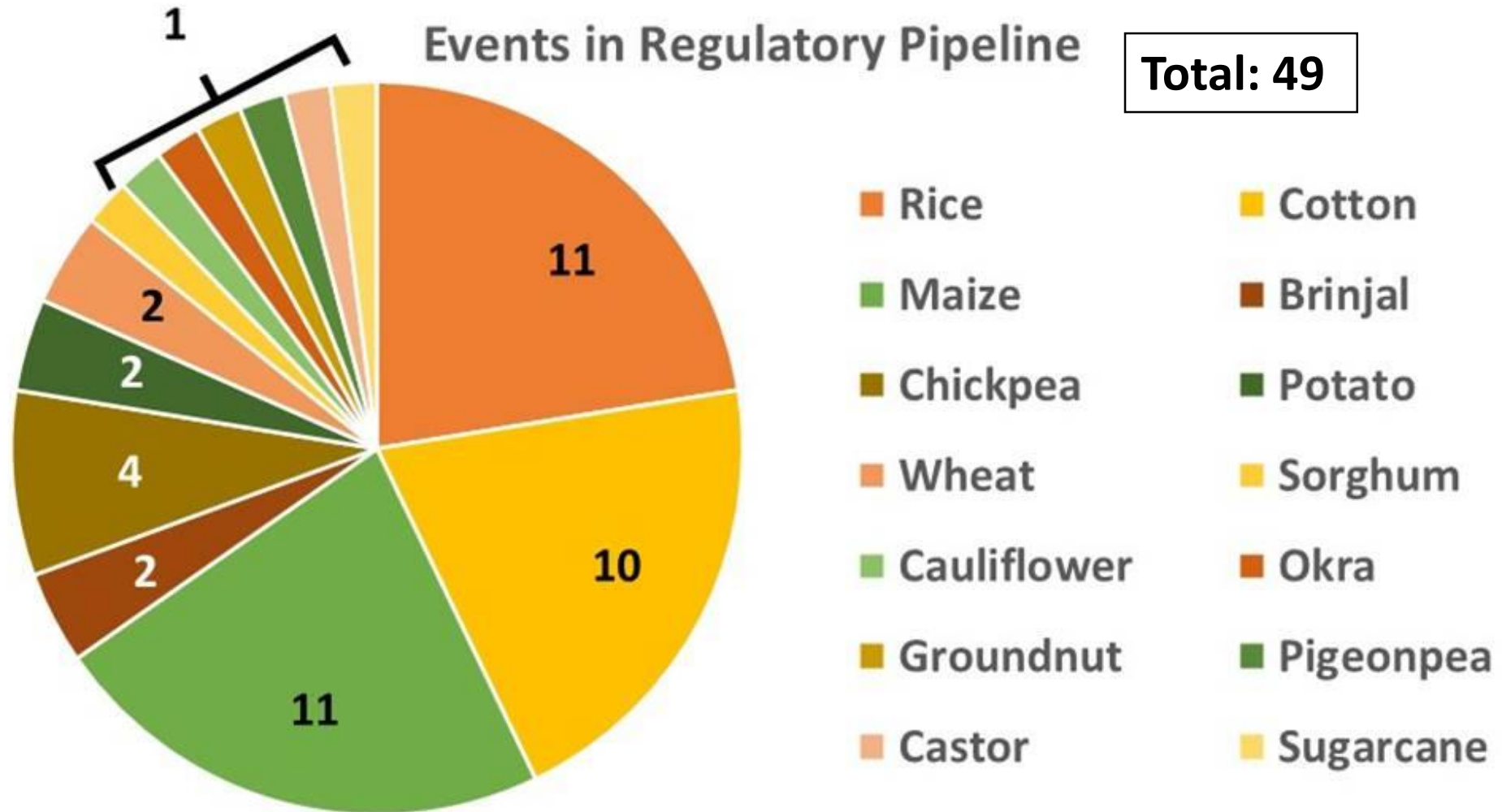
BT & HT Corn



Okra and Cauliflower



Other crops like Chickpea,
Pigeonpea, Peanut, etc



ILLEGAL CULTIVATION OF GM CROPS

HT Cotton



Currently occupying about 15% of Cotton acreage. Small companies multiplying seed and supplying. Farmers in Maharashtra planting this openly in a civil disobedience movement. It is more surreptitious in other states. Monsanto withdrew regulatory application in 2016 due to unfavourable environment. Glyphosate sale is restricted by Government. Glyphosate court cases in USA being used by activists to question the safety of technology.

Bt Eggplant



Being planted sporadically in some parts of India. Seed may be flowing from neighbouring Bangladesh and from illegal seed producers in India.



Factors that led to pull back of GM technology development in India

1. Cotton Seed Price control by State Governments since 2007 – by the Central Government since 2016.
2. Draft guidelines issued by Govt on trait licensing contracts 2016 but kept in abeyance.
3. IP dispute in Delhi High Court and subsequently in Supreme Court between protection of Trait vs Seed
4. Lack of support from States to conduct trials
5. Slow progress of applications in regulatory process
6. Lack of political consensus and political will to approve GM traits



Factors that are favourable for an approval in next few years

1. Government is concerned about increasing import of edible oils – just started a discussion on bringing GM technology in Soybean to improve yields.
2. Government has just announced pathbreaking market reforms in agriculture which will benefit farmers immensely. Reforms in inputs should be a part of the plan of the government. GM approval could be a part of the overall reforms Government is planning to improve profitability of farmers.
3. Increasing demand by farmers and the scientific community.



AAI is a special interest group of FSII,
working on promoting agriculture technologies

THANK YOU

