'New India @ 75' committed to double 'farmers income by 2022'. Gene-editing provide an opportunity to realise this.

Gene-editing (GE) is a tool to get desired outcomes from crop by manipulation, edition, deletion, - alteration and modification of DNA sequencing. CRISPER/CAS9 has made the process more effective and scaled.

Since farmers in India are going through 'plethora of problems', gene editing is a way out. for example

(i) monocropping - the curse of Green Revolution ie. monocroping can be handled through developing variety of crops from GE.

such as - different rice, wheat suitable to local climate.

(ii) climate resilience - Drought resistance, saline resistance like - Pokkali rice Arsenic resistance like mukto shri can mitigate unpredictable climate damage on crops.

(iii) Nutrious crop with minimum input like - Golden Rice for vitamin A to increase cost - Benefit ratio of farmers.

(iv) Pest resitance crops like GM cotton - Bt cotton against Blue worm, locustus sugar to minimise cost on pesticide & herbicide.

(v) New Techniques like Hydroponics, vertical farming and Industrial organ require gene edition. These technology have low inputs of water, land, machines for even more production.

To ensure this — Protection of plant variety & Farmers Right Act 2001 under UOPV secure patent rights of farmers and dispute readdressal.

GEAC protects harmful effect of GE into climate & health.

DBT has laid down guidelines to assess risk and constructive development.

Budget 2020 has increased financial slot for Biotechnology.

There is a need to increase information among consumers and

- Increase R&D with participation of farmers.
- → Farmers dispute should be addressed at their place and not at production place.
- → Ensuring secured market – industry – institution – farmer link should be the priority.