**Abstract Category:** Oral

**Title: Empowering Gen-Z (Farmers) with a New Digital Modelling Framework for Climate-Resilient Agriculture**

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**Abstract:**

96% village-level internet connectivity opens a transformative frontier: enabling Gen-Z farmers to use generative AI as a real-time diagnostic and decision-making tool in the face of climate extremes, crop stress, and insurance disputes. This abstract introduces a lightweight, cost-effective framework using Gemini 2.5 Flash Lite to demonstrate how farmers can upload crop images and receive structured, tabular diagnostics—identifying crop type, growth stage, and health status. For example, a rice crop image yields after typing text prompt in Google search engine in AI mode: “Diagnostic response in a tabular format of the crop type, growth stage, and health based on this image?”.

| **Category** | **Description** |
| --- | --- |
| Crop Type | Rice (*Oryza sativa*) |
| Growth Stage | Vegetative phase—early to mid-tillering, with lush green foliage and active tiller formation |
| Health | Healthy—uniform growth, vibrant color, no visible signs of disease or deficiency |

Crucially, this system supports multilingual voice prompts, allowing farmers to interact in Hindi, Bengali, Oriya, and other regional languages. For instance:

* Hindi: *“मैंने भरतपुर जिले में गेहूं की फसल लगाई है... फसल के लिए क्या सावधानियां बरतनी चाहिए?”*

This democratized interface reframes farmers not as passive recipients of advice, but as active modelers—capable of generating, interpreting, and acting on AI-driven insights.



**Biography:**

Dulal Chakrabarti retired from IMD after 33+ years of service as Head, Information Systems and Services. At present he is a consultant in BKC WeatherSys Pvt. Ltd.

**Keywords:** Climate-Resilience, LLM, Generative-AI, Gemini-2.5-Flash-Lite, Prompt-Engineering