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# **WORLD ANTHROPOLOGY CONGRESS-2023**

**BHUBANESWAR, INDIA | 9-14 AUGUST 2023**

**CTD: 19PD- PEACE, DEVELOPMENT, AND HUMAN SECURITY  
SUB-DOMAIN: DEVELOPMENT, LIVELIHOOD AND EMPOWERMENT**

**PANEL TITLE:**

**SOIL HEALTH MANAGEMENT THROUGH BIOLOGICAL INTERVENTION TO COMBAT ADVERSELY AFFECTED TRADITIONAL AGRICULTURE OF TRIBAL COMMUNITIES AND DEVELOPING ENTREPRENEURSHIP FOR INCOME GENERATION**

**CONVENOR: PROF. S. P. ADHIKARY**

## **ABSTRACT**

With mechanization and use of agrochemicals, especially for rice cultivation on which most people of India depend as staple food, the quality of agriculture ecosystems has changed immensely. Unprecedented increase of agrochemicals like N, P and residual pesticides have caused immeasurable loss of biodiversity and adversely affected soil-water health. Thus, for sustainable productivity use of biofertilizers, biopesticides, bio-stimulants and other organic inputs, as supplements is advocated for almost all crops. This is of much significance for tribal communities living in hilly areas, because for long they continued with traditional agriculture practises but lately, agrochemical use has entered and is adversely affecting the soil health and human health, due to biomagnification in food chain. Hence, it is important to popularize use of biofertilizers like BGA (cyanobacteria), Rhizobium, Azospirillum, Azotobacter for cereals and pulses, bio-stimulants for vegetable and plantation crops, biopesticides and plant-based pesticides for sustainable maintenance of soil health and water quality. It is crucial to focus on organic produce for a healthy living of tribal populations. It is recommended that a Pilot scale demonstration of these organic inputs at the village level, their popularization and involvement of the youth of the remote areas for its production, and supply for agriculture use must be taken up immediately. Motivation for its promotion and use at the village level may be visualized as income generation activity for the young. This would empower them to undertake traditional practices that would provide them nutritious food and help in maintaining biodiversity and sustainable productivity.

In this panel, we propose to share BGA (cyanobacteria) biofertilizer technology for rice cultivation developed by us using region specific and environmental stress compatible strains. When inoculated, they competed successfully with indigenous micro-algal flora, established in the field and contributed to > 10% higher yield, and in addition provided improvement in the soil quality. In addition, seaweed liquid fertilizer (SLF), an aqueous extract developed by us, using as foliar spray and/or seed treatment for different vegetable crops supported 10 to 15 % higher yield. Cost-benefit of both the Cyanobacteria biofertilizer as well as SLF technology for establishment of cottage industries a remote area of Odisha has been worked out for entrepreneurship development to strengthen economic status of rural people. Opening paper in this panel will demonstrate its implementation in traditional agricultural practises undertaken by tribal communities. We invite further contributions from other researchers in this field to prepare an inventory of such innovations for instant use of the farmers in the tribal areas of India.

**Keywords:** Biofertilizers, Biopesticides, indigenous innovations,

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