

Solution:

Submitter: (ICRISAT)

Solution Overview

What is it, and what problem does it solve? Brief 2–3 sentence description.

A systems-based planning and decision-support framework that integrates risk assessment, bioeconomic modelling, and multidimensional sustainability analysis to inform agricultural investment decisions. It accounts for system heterogeneity, enabling policymakers, researchers, and agribusinesses to design resilient, inclusive, and sustainable farm and food systems.

Key Features & Benefits

Main components and why it is useful? Bullet points summarizing methods, tools, and value added.

- Practical training on whole-farm bio-economic models, system dynamics, and value chain analysis to identify effective entry points.
 - Tools include MSAT, a multidimensional sustainability assessment tool, CLEM, crop-livestock enterprise modelling, DSSAT, and system dynamics models as decision-support tools.
 - Supports investment prioritization by simulating climate, resource, and market scenarios.
 - Enables multi-dimensional sustainability assessments (economic, social, environmental, productivity, and human well-being) and helps in designing bundled solutions for enhancing the sustainability of farm and food systems
 - Guides in planning technology and enterprise choices across diverse farming systems, focusing on resilience and profitability.
- Applicable to mixed farming systems, drylands, climate-vulnerable regions, and areas needing sustainable intensification strategies.
 - Adaptable for use by government planners, national agricultural research systems (NARS), NGOs, and agri-enterprise stakeholders.

Evidence & Impact

- What results has it shown? Stats, pilot outcomes, or testimonials.
- Trained over 100 professionals from Asia and Africa under ITEC, CGIAR-SIMFS, and ICAR-ICRISAT programs.
- Enabled participants to simulate enterprise-level interventions, value chain development, and sustainability outcomes.
- Application in India and Sub-Saharan Africa improved planning for CSA investments and sustainable intensification, enhancing targeting and policy alignment.
- Post-training assessments showed increased use of tools for decision-making, research design, and donor proposal development.

Scalability & Adoption Support

Why it can be scaled and what's needed to adopt it?

Low-cost, adaptable, partner-ready, etc.

The approach is low-cost, adaptable, and partner-ready, relying on open-source tools and experiential training methods. Adoption requires basic systems thinking and modelling training, supported by ICRISAT's toolkits, simulation platforms, and expert handholding. The approach aligns with SDGs, CSA Roadmaps, and national investment plans, making it highly suitable for government, donor, and institutional scaling.

Where It Works and Where It Can Work

- Existing and potential target regions, agroecologies, or farming systems. Include examples if available.
- This approach and framework have been deployed in India, East Africa, West Africa, and Southeast Asia through international training programs and field implementation.

Contact Info

For key contacts and more information on scaling this solution, please email: contact.issca@icrisat.org

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