



ICAR-NRM-CCARI-Methodology-2024-072  
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## NOVEL METHODOLOGY TO ASSESS NUTRIENT FLOW, RESIDUE RECYCLING AND RESOURCE USE EFFICIENCY IN INTEGRATED FARMING SYSTEM THROUGH ECOSYSTEM NETWORK ANALYSIS

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### TECHNOLOGY DETAILS

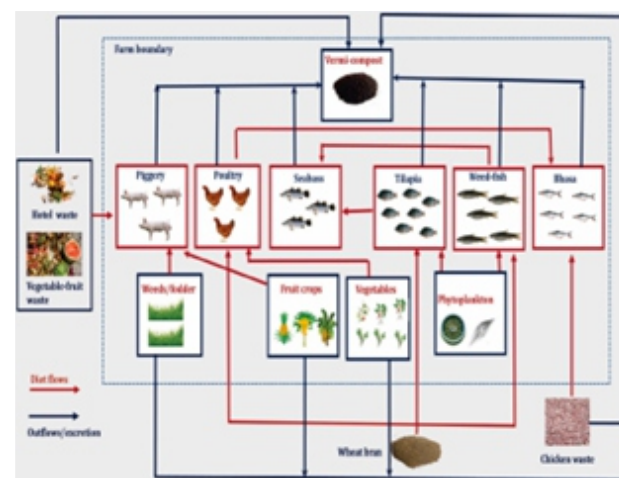
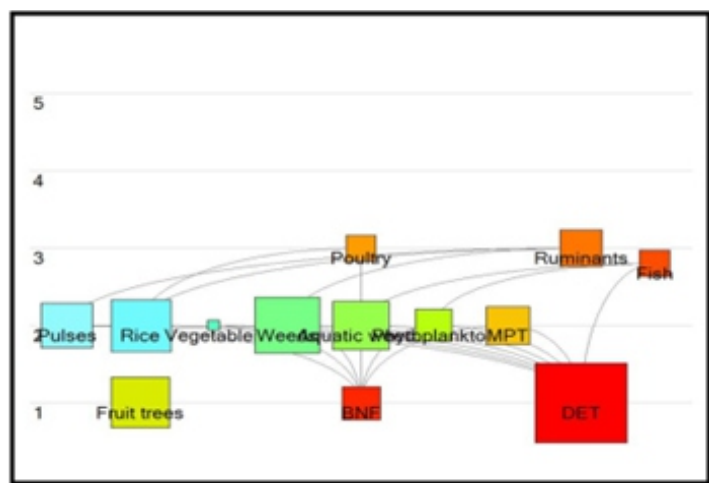
- A novel ecosystem network analysis methodology developed for a lowland integrated farming system (IFS) to understand the nutrient flow between different components, to measure the ecosystem indices and flow characteristics, and to understand the stage of the ecosystem development, maturity, and stability.
- The present methodology will serve as the first of its kind in the IFS from the humid tropics and will help in the evaluation of the other agro-ecological systems using the ecosystem network analysis.

### IMPACT

- This methodology is applied for Integrated Fish-Livestock-Horticulture System (IFLH) from Bicholim (Goa), and for rice based lowland IFS in the western coast of India. The results showed that the IFS system is moderately mature, stable, and resilient.
- The outcome of Ecosystem Network Analysis in rice based lowland IFS indicated that farm intensification through crop and animal diversification is essential to improve farm productivity, food self-sufficiency and resource-use-efficiency
- This ecosystem network analysis methodology is to be tested under AICRP IFS Scheme under different agroecologies.

### PUBLICATION

- Paramesh V, et al. (2020). Ecosystem Network Analysis in a Smallholder Integrated Crop-Livestock System for Coastal Lowland Situation in Tropical Humid Conditions of India. Sustainability. 12(12):5017. (NAAS Rating 9.9)



INDIAN COUNCIL OF AGRICULTURAL RESEARCH

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**Novel methodology to assess nutrient flow, residue recycling and resource use efficiency in integrated farming system through ecosystem network analysis**

16th July, 2024  
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