

# **The Imperative of Multiscale Analysis of Post-Industrial Agriculture. (A08-bland162023-Oral)**

## **Authors:**

- W.L.Bland\* - *Univ. of Wisconsin-Madison*
- M.Giampietro - *INRAN, Rome, Italy*

## **Abstract:**

The agricultural endeavors extant on a landscape are usefully thought of as part of a holarchy-a hierarchy of holons. Constraints are imposed by both larger and smaller scales. Upper-level constraints emerge from societal and environmental contexts. Societal constraints include local standards of return to labor and prices paid for products. The environmental context includes resource availability and animal and plant performance. These contexts place limits on the viable activities a farmer could pursue-the option space. Farmer ingenuity can expand the option space, but only as permitted by upper-level constraints. The lower-level context is that of the farmer, and constraints here include land, human activity, capital stocks and flows, and the payoff function, i.e., what returns satisfy the farmer's values and aspirations. The farmer context shapes the mix of activities chosen from the option space to create a farm. The aggregate of these farms form the regional landuse pattern and agricultural economy. Agricultural research and extension must increasingly recognize this holarchical nature of farming systems.

## **Corresponding Author Information:**

Bill Bland

University of Wisconsin-Madison

1525 Observatory Dr.

Madison, WI 53706

phone: 608-262-0221

e-mail: [wlbland@facstaff.wisc.edu](mailto:wlbland@facstaff.wisc.edu)

## **Presentation Information:**

Presentation Date: Tuesday, November 12, 2002

Presentation Time: 2:00 pm

## **Keywords:**

agroecology, nature of agricultural science