



Survey on regional research needs

Gathered and compiled from the TIPI Board
by Carolin Möller and Helga Willer

Main questions

- Organic System Challenges
- Field Practises Challenges
- Input Challenges
- Crop Challenges – Pest and Disease Control
- Livestock Challenges
- Socio-Economic Challenges
- Post-harvest and Processing Challenges

Scale of issues

- Global
- Asia
- Pacific
- US & Trading partners
- Europe
- West Africa
- Canada
- Latin America
- Drylands of the World

Organic System Challenges

- Limited understanding of how farming systems work
 - *Long-term, multi-disciplinary studies of crop and livestock production systems, with an emphasis on on-farm research*
- Most organic research is focuses in temperate zones
 - *Need to establish best practices for resilience in varying (e.g. Pacific island) conditions*

Organic System Challenges I.

- Need to combine local tradition with innovation for smallholder organic farming
 - *Regional adaption is needed of already existing and proven solutions and experience from different regions.*
- Contamination risks within the system are not thoroughly identified (pathogens, pesticides)
 - *Determine sources of contamination and look at practices to mitigate the risks of contamination.*

Field Practises Challenges

- *Soil building*: Basic research on the roles played by different organisms to cycle nutrients, suppress diseases, maintain soil structure, and grow healthy plants for healthy humans and livestock.
- *Tillage systems*: Further development of no-till and reduced till methods for organic (weed suppression)

Field Practises Challenges I.

- *Biocontrol*: Need for further biological pest and disease control
- *Weeds*: Study of weed ecology, cultural practices, effective rotations; development of bio-herbicides that are compatible with organic principles and criteria

Input Challenges

- *Copper alternatives*: Substituting materials, biological controls, crop rotations
- *Varieties suitable for organic*: Testing of locally appropriate varieties, organic breeding, organic seeds
- *Micronutrients*: identification of micronutrient sources and techniques for their supply for high quality organic products (iron, magnesium, selenium)

Crop Challenges – Pests & Diseases

- *Cocoa Swollen Shoot Virus Disease (CSSVD)* in West-Africa
- *Fire blight (Erwinia amylovora)* in fruit production (apples, pears), *Fitoplasma solanii* in vine
- *Citrus greening virus (HLB)* – nutrition control?
- *Brown Marmorated Stink Bug (Halyomorpha halys)* in the US (apples) – natural enemy?
- *Spotted Wing Drosophila (Drosophila suzukii)* – fruits
- *Fruit fly* (oriental and other varieties) *Red Spider Mite*; *White Moth*
- *Giant African Snail*- leafy vegetables

Livestock Challenges

- Assessment of *preventive organic practices* to improve organic livestock health
- Reduction of *parasite pressure*
- *Mastitis prevention* and therapy methods
- *Pneumonia*
- *Natural sources of amino-acids* (methionine)
- *Alternative & additional feed* (plant extracts)
- *Aquaculture* practices

Socio-Economic Challenges

- Assessing factors of *consumer trust* in different regions
- *New economic calculations* of food value – linking costs to carbon/water demand
- Research on *possible communication methods*, which may reach policy makers amongst others

Post-harvest and Processing Challenges

- *Innovative organic cocoa processing* (Research & Development trials)
- Efficient *cracking of indigenous nuts*, solar drying (Pacific)
- Development of sustainable *packaging materials*

Conclusions from the survey

- A large part of the world's organic research needs could be covered by:
 - Dissemination and local adaptation of existing research results, solutions
 - On-farm research & development seems to be a successful tool
- Most topics came for **biological pest and disease control**
- General need for a better system understanding, also in **tropical and subtropical climate**

Anything to add?

Looking forward to your further
input!