

Automation and Robotics in Agroecology

The Benefits, the Drawbacks, the Implications for Food Sovereignty,
and our local food systems..

Can these methodologies help in fixing our broken food system, and
can they be useful tools for addressing the climate crisis ??

Framing the Discussion.

- What qualifies as automation, and robotics.
- Where do we draw the line between smart tool, and automation.
- From very simple examples, such as a timer on an irrigation system.
- To far more complex programmed, robot weeders.
- Who owns this technology?
- Is it a truly useful tool to the agroecologist ??

Agriculture, Ecology, Society, The Interface with Automated Technology

- Can these technologies benefit those ecological elements we are seeking to restore and care for – ie soil, air, water, quality, and biodiversity ??
- Or do they become a method through which bigger tech corps can potentially disempower the agroecologist / peasant farmer?
- What are the impacts for nutritional quality.
- How is Land Justice / Access to land affected?
- Does tech impact on the diversity of farmers?
- Is Food Justice for the farmer, food-worker, and the food citizen, benefitted or degraded ?.
- Do incomes become more, or less secure?
- Do these smaller scaled technologies allow for corporate land grabbing in the wider context

Ownership, and Control.

- Cost of development ??
- Open source technologies represent a great generosity of spirit but who supports the developers ??
- If we agree that open source is best, how do we enhance access ??
- Farm hacks ? Farmer to farmer exchange of knowledge and learning.

Simon Fairlie

- Perspectives, from a voice with much experience.



Jonathon Hughes, Farm Bot



The Weedinator



My Robot



AUTOMATION & ROBOTICS:

**TAKING A VIEW THROUGH A SOCIAL &
GENDER LENS**

JENNA HOLLIDAY

GENDER & MIGRATION LABOUR SPECIALIST

AUTOMATION & ROBOTICS: TAKING A VIEW THROUGH A SOCIAL & GENDER LENS

- **POLICY**
 - Industrial focus
- **DESIGN/ RESEARCH**
 - Computer science
 - Agricultural research
- **OPERATIONAL/SKILLED**
 - Increase in women
- **SEMI SKILLED WORK**
 - Need for flexible /
digitally familiar labour
- **MANUAL WORK**
 - Migration
 - Increased bifurcation



CASE STUDY: ASPARAGUS PICKERS

- One machine can do the work of 70 manual pickers;
- Reduces cost;
- More accurate picking with less damage to the plant;
- Cheap (migrant) labour is harder to come by in Europe. Robotic pickers mean smaller European producers are able to compete with the largest producers (China, Peru, Mexico) who benefit from cheap labour.



TRANSPLANTING

- Transplanting is highly labour intensive;
- The fastest machines can do 25,000 plugs/hour;
- Transplanting robots can offer a fully integrated system of sowing the tape, germination, and nursery care.

Further Agroecological Explorations

- How could these technologies help or hinder our efforts to combat climate change.
- If they are useful, how do we disseminate this information.
- Reflections on what you've heard from the other panellists, and has your position, on the use of these technologies changed at all.?