Informal e-group on Bioenergy and Nutrition

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Scope and Activities of 2022

SCOPE:
- Sustainable bioenergy assessments for policy recommendations on potential nutrition outcomes (through stocktaking exercise, i.e. literature review).
- Knowledge product development: information on bioenergy-nutrition nexus.
- Programming through the investment: based on the bioenergy-nutrition nexus within food systems.

Concrete activities carried out in 2022:
- Literature Review – finalised April 2022
- Webinar to disseminate and discuss findings – held May 2022
- Presentation at GSOIL4N (Global Symposium on Soils for Nutrition) – July 2022
- Peer-reviewed article in WIRES Energy and Environment – submitted November 2022
Literature review

Objective: Explore the *positive* linkages between bioenergy and nutrition, with a view to bring these to the attention of bioenergy and nutrition communities to enable more nutrition-sensitive bioenergy policy and programming.

- Exploratory review of peer-reviewed literature and technical papers on the relationship between bioenergy and nutrition
  - Implications of bioenergy on human nutrition are explored; implications of nutrition (e.g. changing diets, reduced/enhanced nutrition) on bioenergy are *not* considered through this review.
  - Other co-benefits/potential necessary safeguards may be briefly mentioned but are not the focus of the research.
  - Bioenergy and food security in general is *not* addressed.
Overview of findings

Bioenergy value chains

- **Bioenergy production**
  - Phytoremediation
  - Integrated biomass production systems
  - Income diversification

- **Bioenergy by-products**
  - Use of biochar and digestate

- **Bioenergy use**
  - Improved cookstoves and clean cooking solutions
  - Food transport and storage

Many of these practices have implications for nutrition due to their impacts on soil quality (e.g. enhancing physical and chemical properties, detoxifying soil contaminants, reducing soil erosion and degradation, improving soil fertility, promoting biological functioning...)

What could be the implications of these practices on nutrition security...?
Exemplifying case study 1

- Micro-gasification value chains to increase access to sufficient, safe, and nutritious food
- Clean cooking
- By-product – biochar – used as soil amendment

Use of residues for cooking

Clean and renewable energy production for cooking

Biochar as by-product

Biochar as soil amendment improves soil fertility

Increased soil fertility
Exemplifying case study 2

**Biogas systems** to improve the sustainability of
- livestock farms
- agricultural farms

- Bioenergy crops on MUC;
- 2nd harvest crops
- Cover crops
- Crop residues

Clean and renewable energy production for cooking

Feed crops

Digestate
Conclusions

• The findings from the articles reviewed show evidence of multiple indirect or implied linkages between bioenergy and nutrition

• Potential that bioenergy can indirectly work to improve nutrition and promote healthy diets
  • The literature review identified some bioenergy value chains and/or specific good practices across these value chains that could contribute to ensuring nutrition at the household level – especially interesting value chains could be small-scale gasification and biogas, combined with use of by-products
  • Research in this area is still lacking and some linkages still need to be verified
Peer-reviewed article

• WIRES Energy and Environment ‘focus’ article currently under review
• Developed on the basis of the results of the literature review, further investigating certain linkages and potential implications, and areas for further research
Thank you

References and acknowledgements:
References are available in the literature review on the GBEP website.
The review was prepared by Caitlin McGinnis (Consultant, Food and Nutrition Division ESN, FAO), with the support, and under the guidance, of Constance Miller and Maria Michela Morese (FAO, Global Bioenergy Partnership), Patrizia Fracassi and Tomoko Kato (FAO, ESN).
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