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Is biofuel the answer? Experiences of pastoralists and smallholder livestock keepers

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Overview

- What is biofuel?
- History
- Potential and limitations
- Reports from the grassroots
- Is biofuel the answer to our climate problems?
- Pastoralism and local breeds – a viable strategy for sustainable dryland use
- Sources

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What is biofuel? Definitions

- Biofuel = solid, liquid or gas fuels derived from biomass for energy generation in transport, electricity generation, and heating (Global Energy Partnership, FAO)
- Common use of „biofuel“ = liquid fuels, alternative to fossil fuels.
- Agrofuels = biofuels made from crops and agricultural by-products

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What is biofuel (2)

1st generation biofuels

- 1. Ethanol (bioethanol) distilled from plants with high contents of sugar and starch: sugar cane, cassava, maize, soya etc
- 2. Biodiesel from oily seeds (*Jatropha curcas*, *Pongamia pinnata*, sunflower, etc).

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What is biofuel (3)

2nd and 3rd generation biofuels

= energy and fuel from urban and agricultural waste rich in cellulose

- More complex, need more technology and infrastructure investments than 1st generation biofuels

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History

- **Ethanol distillation already known in traditional cultures**
- **Jatropha biofuel development started in the 1980s. *Jatropha curcas***
  - Is a drought resistant plant
  - Has originally been promoted as a living fence, erosion control etc.
  - It is toxic for livestock
  - Livestock does not browse on it.

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History (2)

About 3-4 years ago, governments started promoting biofuels on a large scale to

- secure energy supplies
- meet the Kyoto agreement of Greenhouse gas reduction
- get income through sale of biofuel or renting out land to investors

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History (3)

- **High targets for biofuel production:**
  - EU targeted 10 % of biofuels in transport by 2020
  - Germany targeted 20% share for renewable energy by 2020
  - India promotes jatropha on 50 million ha of land declared as waste land
  - Philippine has contract with Chinese, Tanzania with Swedish investors

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Potential of biofuel

- Replaces fossil fuels with renewable energy source
- Source of income for smallholders
- Source of energy where there is no electricity

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Limitations

Intensive production on a large scale offsets advantages as a source of renewable energy

Reasons:

→ Intensive production of 1st generation biofuels needs lots of nitrogen and water

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Limitation of intensive biofuel production (1)

- Ethanol from maize or oil from rapeseed → 0,9-1.7 times the climate impact of fossil diesel
  (EU 2007)
- Transport biofuels least cost-effective measure for carbon saving while biomass for heating most effective
  (UK Biomass Strategy cited in JNCC 2007)

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Limitations of intensive biofuel production (2)

→ uses a lot of land

- Designation of waste lands for biofuel production no solution because

Waste land is rarely waste! Most is used for grazing and the collection of food, fire wood and building materials

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Limitations of intensive biofuel production (3)

→ competes with food production

International Grain Council estimates about 6.5 % of grain grown in 2007-8 to be used for biofuel; other estimates higher

→ reduces biodiversity

- Monocultures
- Use of pesticide

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Reports from the grassroots

Civil society organisation report that intensive biofuel production

→ destroys the basis for the livelihoods of pastoralists and small-scale farmers

→ displaces people

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Reports from the grassroots (2)

Pastoralists from southern Tanzania reported that the Tanzanian government evicted them from their land to give it to biofuel investors

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Reports from the grassroots (3)

- Pastoralists may sign agreements without understanding the implications

Pastoralists in Ngorongoro, Tanzania, accepted development project growing Jatropha on their lands to produce fuel for local use

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Pastoralists in Ngorongoro ctd

But: livestock died, probably because of poisoning from jatropha. Land cannot be used for grazing any longer.

Result: Pastoralists want to cancel contract because grazing land for their livestock is more important for them than fuel

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Is biofuel the answer for our climate problems?

It depends:

- Uncontrolled large-scale intensive production is not the answer
- Small-scale production may have benefits for poor livestock keepers and small-scale producers

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What needs to happen?

- Raise awareness on the disadvantages of large-scale production
- Moratorium?
- Develop minimum standards for biofuel production
- Initiate extensive small-scale production
- Foster alternative strategies for dryland use

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Pastoralism and local breeds -- a viable strategy for dryland use

- Pastoralism increasingly recognised as an optimal strategy for dryland use.
- Precondition: mobility
- Local breeds
  - are hardy and adapted to local conditions
  - can produce without commercial fodder and other external inputs
  - survive droughts
  - have increased resistance to certain diseases

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Local breeds – a treasure at stake

- **According to FAO,**
  - we are losing one breed a month.
  - Reasons for breed loss include indiscriminate crossbreeding and culture change.
  - Developing countries will be the hot spot of future breed loss.

Bioful production will put additional pressure on local breeds

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www.pastoralpeoples.org www.eldev.net

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