Resilience of agro-pastoralist systems

(in India)

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India is a collage of pastoralist cultures, most of them agro-pastoralists.

Prevailing perception: „India is land of ‘farmers’.”
Agro-pastoralism is India’s dominant livestock production system.
Despite being densely populated, and having comparatively small land mass,

India is the world’s

• largest exporter of sheep and goat meat
• largest exporter of 'beef' (buffalo meat)
• largest milk producer,

It is estimated that more than 70% of its meat and more than 50% of its milk is produced on common pool resources in 'traditional systems'.
Agro-pastoralism

• utilizes mosaic of grazing resources, incl. crop aftermath, natural vegetation, loppings-
• generates a 'second crop' out of a field, while also fertilizing it.
• provides de-weeding and germination services.
• utilizes any kind of biomass.
• often sylvi-agro-pastoral systems.
Agro-pastoralism depends on complex and wide-ranging social arrangements, within the community, with land owners/farmers, local communities, and traders.
'Pathway Diversity' is the key to resilience of agro-pastoralism

- Mobility – can move wherever rain falls or where new areas open up
- Ability of animals (animal genetic resources) to adapt metabolic rate – eat very little or eat in excess
- Ability of herders to influence gene pool on the spot (breeding decisions)
- Ability to contract or disperse
- Ability to absorb labour during economic shocks

Strengths: not dependent on imported feed or large processing facilities, basically autonomous. High protein efficiency!
Vulnerability/Resilience of agro-pastoral systems

Well positioned to withstand amplification of natural shocks

Natural shocks

- Droughts
- Extreme Weather
- Disease vectors

Human made shocks

- Anthropocene

Sedentarization
- Crop changes
- Enclosures
- Alienation
- Road construction

largely powerless with respect to human made shocks/interferences.

cope well with natural shocks, due to mobility, traditional knowledge, social networks, well-adapted animals.

Agropastoral Systems
Considering the benefits of agro-pastoralism, why are there so many human-made shocks and no support systems?

• Mental map „India is land of ‘farmers‘ and nomads are unproductive, inefficient and backward“

• ‘Output per sheep is low...growth rates do not compare to western countries‘

• Lack of recognition of value of (agro-)pastoralism. The fact that it provides organic manure, supports biodiversity, requires no fossil fuels (solar-powered), is animal welfare friendly, and can deal with climate shocks does not enter into the equation.

CONVENTIONAL ‚EFFICIENCY THINKING‘ DOES NOT CAPTURE THE BENEFITS OF AGROPASTORALISM
Efficiency versus resilience

EFFICIENCY
• measured by output versus input; typically amount of feed versus body weight or milk yield
• rather one-dimensional (reductive?)
• is based on uniformity and stability
• can only be applied to controlled systems in which humans have created artificial environment, as it leaves out possibility of shocks

RESILIENCE
• measured by continuity of output (?)
• has temporal dimension – must be measured over time
• variability (shocks) is integral part of equation
• more realistic in an unstable scenario such as climate change and fluctuating weather patterns.

Can they be compared? Or are they apples and oranges?
The fact that ‘efficiency‘ and output/yield per animal is the ‘mantra‘ of livestock development, and by which livestock is judged, prevents us from getting the whole picture.

In order to get a real-life picture, we need to figure in the ability of livestock systems to withstand both short-term and long-term shocks, i.e. resilience (as well as positive and negative externalities)
Conclusion

• We need to re-evaluate our approach of taking an individual animal‘s performance under controlled conditions as yardstick for gauging the value of livestock production systems (‘portrait approach‘).

• If we want to achieve livestock systems sustainability, resilience and acceptability, we need to expand the prevailing criteria of efficiency and productivity by other criteria for evaluating and judging the worth and value of livestock systems.

• The solution would be a ‘landscape approach‘ that seeks to optimally deploy livestock to utilize the variable biomass of a given area, with the minimum of external inputs (incl. fossil fuels, antibiotics, etc) and maximum of positive side-effects.
Thank you

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