briefing
Climate resilient drylands development
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Global public policy narratives on the drylands and pastoralism

The global narratives that have dominated agricultural policy are built on crisis scenarios around meeting projected food demand, now complicated by global climate change and food price spikes. The role given to drylands and pastoralism in these narratives shows little consistency, except for characterising them as lacking in some way, for example: unproductive, resource scarce, fragile, marginal, remote, using resources that are uninteresting for other uses. A closer look reveals pastoralism's many positives. The increasing recognition that pastoralist systems in the drylands can work with environmental variability, rather than against it, opens up an alternative storyline for global food security under climate change.

Policy pointers

- **The perceived food crisis** needs to be framed in terms of governance, not in terms of supply and of low productivity from developing countries.
- **The drylands and** pastoralism are wrongly perceived as being isolated from crop farming.
- **Global narratives need to** look at pastoralism more closely to reveal its many positive aspects.
- **Pastoralist systems** work with environmental variability rather than against it, and could be key to finding new methods of global food production.

What are development narratives?

The 'development narrative' approach acknowledges that large-scale planning, such as rural development policies needs large-scale simplifications (Roe 1991). These simplifications have the logical structure of a storyline (a narrative), with a crisis scenario at the beginning, a central section outlining the problem and its causes, and a final section defining a range of interventions. They are partially fictional, and could not be otherwise, in order to make sense in the huge variety of contexts in which they are applied. Narratives are useful in bypassing paralysing uncertainty, mobilising political consensus and economic resources for making necessary action possible. The higher the uncertainty, the more they are needed; therefore narratives are characteristically resistant to undermining by contrary evidence or operational failure.

The most successful narratives are those that serve the interests of critical constituencies; historically, these have been governments, aid bureaucracies and scientists. Winning policy narratives contain:[2]

1. **A crisis scenario**, to generate extra-ordinary consensus, open up new avenues of legitimacy and stretch thresholds for accepting sacrifice.
2. **A logical structure firmly rooted in a world-view** that is simple, powerfully intuitive and widely held (e.g. the Malthusian argument on food and population; the 'tragedy of the commons'; resource scarcity in the drylands; economies of scale).
3. **A politically neutral concern**. Narratives are political in their making and operations, but favour arguments that allow them to keep clear from the political arena and avoid inconvenient questions.
4. **A fertile ground for programmes of scientific research.** Support from scientific networks provides a narrative with the aura of apolitical authority associated with the objectivity of scientific methods; and cushions the challenge from contrary scientific evidence.

Global development narratives

For the last twenty years, global agricultural policies have rested on a development narrative around meeting projected food demand: the projected increase in the world population by 2050 needing to be matched by an increase in food production – especially in developing

countries. Global narratives have been characterised by a crisis scenario about soil fertility and land degradation, but articulated around the assumption that there is a linear relationship between anticipated growth in cereal production, present population growth and food security. The narrative has now become more complex with new alarms raised on global climate change and the volatility in food prices, combined with the complications of a fuels crisis and a financial crisis (see Box 1). Both the climate-change twist and the food price twist in traditional development narratives have generated new dimensions of stewardship with regard to the natural environment, deconstructing existing entitlements in poor rural areas, and paving the way for large-scale dismantling of communal land tenure systems.

The narrative has become more complex

What role for drylands and pastoralism in global narratives?

In global narratives, pastoralism and the drylands are usually found in a peripheral position. Most definitions make reference to what they are not rather than what they are, for example, the lack of integration with crops; the scarcity of natural resources; the lack of possibility for economic growth (just managing the constraints); and the use of land that lacks 'value' for crop based agriculture. This definition of pastoral systems as being 'favoured in areas of marginal value for agriculture' (ILRI 2012: 4) is critically important: Favoured by whom? Clearly not by pastoralists, who would have no advantage in leaving better areas to other producers.[4] In addition, being defined as operating with the 'left-over' of other systems leaves pastoral systems open (vulnerable) to virtually unlimited undermining.

Defining pastoralism by subtraction (i.e. by what it is not) isolates it artificially from crop farming. This is a mistake. In reality, many mobile pastoral groups practice some form of farming; while sedentary farmers owning livestock in any significant number will keep them mobile under pastoral management strategies. The two 'specialisations' also have a crucial period of interaction when harvested fields are manured by transhumant livestock feeding on crop residues, opening up to a peculiar form of large-scale crop-livestock integration the otherwise 'closed circuit' of the farm. Livestock keeping and farming may be discrete specialisations and still be integrated at higher order of organisation (i.e. regional) (Krätli *et al*. 2013).

Pastoralism and the drylands on closer inspection

When drylands and pastoralism are given direct attention, rather than a peripheral position in narratives focusing elsewhere, their images stop looking so negative (or simply confused and contradictory) but become positive and meaningful:

1. Land degradation and overgrazing

The documents reviewed showed that the evidence is uncertain. This is to be expected for a task that poses formidable challenges in the consistency and commensurability of data. Despite this uncertainty, there is

Box 1 Environmental narratives with new twists

The climate change twist – The transformation of the Kyoto Protocol's Clean Development Mechanism into a market for carbon trade has rapidly changed the ways an ecosystem and its users are understood. The notion of 'nature' is now split into two categories, 'for use' and 'for repair', with the latter ancillary to the former and with 'repair services' that can now be valued and traded. The financialisation of ecosystems services (for example in REDD[5]) has made these fictitious commodities the object of a real market. Nature 'for repair' (i.e. land in poor rural areas) is a new product for financial speculation.

The economy of repair has been smuggled in within the rubric of 'sustainability', but its logic is clear: that unsustainable use 'here' can be repaired by sustainable practices 'there', with one nature subordinated to the other. (Fairhead *et al*. 2012: 242). Conceptualising the drylands as 'there' (remote, peripheral, different) triggers now a whole new set of implications.

The food prices twist – The familiar crisis scenario around meeting future food demand has been made more complex and compelling by the food price spikes of 2007-2008, and the consequent investment rush in existing or prospective farmland. The price spike happened at the same time as the first financial crisis was unfolding. Quantitative easing money paid by governments to bail out the banks and partially flowing into the commodities market made the problem worse. Official explanations at the World Food Summit in 2008 first considered a range of causes including the rising demand in grains for biofuel, and protectionist measures taken by governments at the beginning of the crisis, but soon steered away from governance or global markets, to focus on the argument of an imbalance between demand and supply, placing the main responsibility for the crisis on the supply side, and especially on low productivity in developing countries. Conceptualising the drylands as characterised by resource scarcity and low productivity places them on the front-line of use-conversion.

broad consensus around a 'land degradation emergency', with the emphasis on overgrazing (explicitly or implicitly by pastoralism). On closer inspection the same literature will also often say that the worse degradation in pastureland is around villages and water points (most of which are also settlements). There is also plenty of evidence on the risk of overgrazing increasing as livestock management becomes less mobile; with the implication that fixed livestock systems are more responsible for degradation than mobile ones. Unfortunately though, in many documents, the undermining of pastoral mobility is accepted as unavoidable and the focus is on expanding mixed-farming systems.

2. Pastoralism and GHG emissions

In 2006, the FAO report *The Livestock's Long Shadow* claimed that the livestock sector was responsible for 18 per cent of global anthropogenic greenhouse gas (GHG) emissions. Most of the environmental problems associated with the 'livestock sector' in the report are caused by deforestation in order to produce pasture and fodder crops, and therefore pinned on 'extensive grazing systems'. Mobile pastoralismis is implicated by this broad definition as one of the major players in the global livestock sector's GHG emissions. On a closer look however the same sources also claim that: *'If properly managed, nomadic pastoral livestock production is potentially the most environmentally compatible agricultural activity in this ecosystem'* (Steinfeld *et al*. 2006: 35), and that *'for greenhouse gas emissions [...] the extensive Sahelian system is more efficient than the intensive American feedlot, and thus the intensive production is more environmentally damaging'* (Steinfeld *et al*. 2010: 117).

3. Pastoralism and climate change

A sub-narrative in many documents is that pastoralism is about coping with an extreme and uncontrollable environment. With global climate change increasing environmental instability, pastoralists are seen as amongst the groups most at risk. '*The small amount of precipitation and its high variability limit the productive potential of drylands for settled farming and nomadic pastoralism'* (MEA 2005: 63). In most cases this simplification aggregates pastoralism with crop farming, overlooking the fundamental difference in the way pastoral systems make use of dryland environments, that is by working *with* their characteristic variability rather than *against* it. There is however a twist to the 'doomed-by-climate-change' story line, with pastoralists also seen as having the ability to 'repair' nature (see Box 1):

> *Considering the importance of rangelands in land use (about 40 per cent of the total land surface), herders and pastoralists could play a crucial role in soil carbon sequestration. All over the world, there are some 100-200 million pastoralist households covering 5,000 million ha of rangelands – in which are stored 30 per cent of global carbon stocks.* (IFAD 2011: 9)

4. Pastoralism and the green economy

Extensive livestock systems are seen as providing both a service in 'improving soil fertility' and in the 'role of carbon sink in improved savannahs', as well as a disservice in terms of soil erosion and decreasing soil fertility (as a consequence of overgrazing). Each tends to be highlighted without any further specifications – leaving the impression that service and disservice balance each other out (ILRI 2012: 4).[7] A closer look might instead consider the environmental services that are not only found in 'extensive livestock systems' but peculiar to the strategic use of mobility of livestock and people, for example: the propagation of fodder plants; the non-harvesting of grass; the manuring (i.e. regenerating) of cropland as well as savannah (rather than felling trees); the use of fewer trees for construction; the lack of concentrations of pollutants and waste (including both rubbish and human waste); and the reduced breeding ground for human and livestock diseases compared to concentrations of human and livestock populations.

Is there another storyline out there?[8]

Systems of food production are being globalised to depend on uniformity and stability: environments where diversity and variability have been eliminated and ideally every aspect of the process of production can be controlled. With rising levels of weather volatility, controlling the production environment in agriculture is becoming increasingly expensive for some, and unsustainable for most. The projected impacts on global food security are huge. The overall loss of diversity, not only in the environment but also in production systems, has resulted in limited alternatives. Scientists are aware of these problems, and the pressing need to find alternative food production systems that do not depend on controlling and neutralising the environment and its variability (Folke *et al.* 2002; Leach *et al.* 2010). Pastoral production in arid and semi-arid rangelands holds an important lesson in this direction.

Pastoral systems have evolved and prospered for centuries under conditions of great environmental variability. They have done so by using the environment in a way that is fundamentally different from the approach globalised by agricultural development. In the 1990s a new model of range ecology took on board unpredictable variability as the defining feature in arid and semi arid ecosystems. This has fundamentally changed our understanding of pastoral production and its environment – from characterised-by-scarcity to valuable, from fragility to resilience, from problem to asset (see Box 2).

Global narratives currently obscure the important lesson that pastoral systems carry for food production, in which environmental variability is both an important asset and

Box 2 Harnessing environmental variability for food production

Once outside the globalised orthodoxy that productive agriculture requires a controlled environment, the way to look at pastoralism and the drylands is turned on its head. The unpredictable variability that had been treated as a disturbance to an equilibrial ecosystem (a disturbance that needed correcting or neutralising) is now understood as integral to the functioning of the rangeland ecosystem.

Patchy rainfall in the drylands means that nutrients from pasture become available in unpredictable and ephemeral concentrations. Nutrients accumulate as the plant grows until they are used by the plant itself to complete its cycle. For livestock systems, selectively using the pasture when nutrient content is peaking makes the difference between abundance and scarcity in the same environment.

Mobility serves production by enabling such targeted and timely access. Many scholars now see pastoral mobility not only as a way of coping with a difficult environment, but more importantly as a strategy to harness environmental instability for food production. When free to operate according to its logic, pastoralism turns into an asset the unpredictable variability of dryland environments that globalised agricultural systems find irreducibly problematic.

Source: Kratli *et al* (2013).

unavoidable. Taking this shortcoming into account, and integrating some small amendments, could expand the functional utility of these narratives to everybody's advantage. In a world of globalised methods of food production, where alternatives have become hard to find and where weather volatility is becoming the norm, pastoralism illustrates how environmental variability can be worked with rather than against.

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This brief is based on a longer report: Krätli, S. & Enson, S.J. (in draft, 2013) *A review of global public policy narratives on the drylands*, IIED, London.

Notes

■ [1] Roe E. 1991. 'Development narratives, or making the best of blueprint development'. *World Development* 19(4):287-300. ■ [2] This section makes free use of previous analyses (Roe 1991; Swift 1996; Keeley and Scoones 2003 – see Further reading below). ■ [3] Fairhead J., Leach M. & Scoones I. 2012. 'Green grabbing: a new appropriation of nature?' Journal of Peasant Studies 39(2,): 237-261. ■ [4] Pastoral systems typically depend on access to more fertile areas as grazing reserves during long dry spells, and the progressive loss of these areas to government programmes or privatisation schemes for agriculture is a major issue. ■ [5] Reducing Emissions from Deforestation and Degradation ■ [6] Steinfeld, H., P. Gerber, T. Wassenaar, M. Rosales, and C. de Haan. 2006. 'Livestock's long shadow: environmental issues and options'. *Livestock, Environment and Development.* FAO, Rome. ■ [7] ILRI 2012. *Greening livestock: assessing the potential of payment for environmental services in livestock inclusive agricultural production systems in developing countries.* ILRI, Kenya. ■ [8] This section makes use of Krätli S., Hülsebusch C., Brooks S. and Kaufmann B. 2013. 'Pastoralism: A critical asset for food security under global climate change'. *Animal Frontiers* 2(5): 42-50.

Further reading

■ Folke C., Carpenter S., Elmqvist T., Gunderson L., Holling C.S., and Walker B. 2002. *Resilience and sustainable development:building adaptive capacity in a world of transformations.* Scientific Background Paper on Resilience for the process of The World Summit on Sustainable Development on behalf of The Environmental Advisory Council to the Swedish Government. ■ IFAD 2011. *Resilient livelihoods through the sustainable use of natural assets.* Environment and natural resource management. IFAD, Rome. ■ Keeley J. and Scoones I. 2003. *Understanding environmental policy processes.* Cases from Africa. Earthscan Publications Ltd, London, Sterling VA. ■ Leach M., Scoones I. and Stirling A. 2010. *Dynamic sustainabilities: technology, environment, social justice.* Routledge, Oxford, New York. ■ MEA (Millennium Ecosystem Assessment) 2005. Ecosystems and human well-being: Synthesis. World Resources Institute, Washington DC. ■ Swift J. 1996. 'Desertification narratives, winners and losers.' In: Leach M. and Mearns R. (eds) *The lie of the land. Challenging received wisdom on the African environment.* The International African Institute with James Currey Ltd., London and Oxford.

About the project

IIED, in partnership with University of Peking in China, the Revitalizing Rainfed Agriculture Network and Rainfed Livestock Network in India, and the Arid and Semi-Arid Lands Secretariat of the Ministry of State for Development of Northern Kenya and other Arid lands in Kenya, is implementing a one-year project entitled *New perspectives on climate resilient drylands development* (2012/13). Funded by the Ford Foundation, the project is researching the assumptions, arguments and evidence that underpin national and global narratives on the drylands in order to formulate more progressive perspectives based on scientific evidence and traditional local knowledge and experience. The views expressed in this briefing, however, do not necessarily reflect the position of the Ford Foundation.

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